ATTACHMENT 4(A)

Candidate B: General Facility Description

Old South Willington Road, Willington, Connecticut 06279
Owner: Lawrence Becker
Tax ID: M18-19
Approximately 170 Acre Parcel

The proposed facility consists of a 100’ by 100’ lease area located in the south portion of an approximately 170 acre parcel owned by Lawrence Becker at Old South Willington Road in Willington. A new self-supporting monopole tower 190’ in height would be constructed. AT&T would install up to 12 panel antennas at the 187’ centerline height on 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. An 8-foot high chain link fence would enclose the tower compound. Vehicle access to the facility would be provided over a new 958' gravel access drive 12' in width. Electric and telephone utilities would be extended underground from a proposed riser utility pole to the proposed facility. Provisions are also included for an emergency generator to be located on a 4’ x 11’ concrete pad within the tower compound.

Candidate B: Site Evaluation Report

I. LOCATION

A. COORDINATES: 41° 51’ 48.3” N 72° 16’ 28.3” W

B. GROUND ELEVATION: 682’ AMSL

C. USGS MAP: Coventry Quadrangle

D. SITE ADDRESS: Old South Willington Road, Willington, Connecticut

E. ZONING WITHIN 1/4 MILE OF SITE: Commercial, Residential

II. DESCRIPTION

A. SITE SIZE: 100’ by 100’ lease area, 75’ by 75’ compound

B. LESSOR’S PARCEL: ± 170 acres

C. TOWER TYPE/HEIGHT: Monopole / 190’ AGL.

D. SITE TOPOGRAPHY AND SURFACE: The proposed site is located towards the northern/central portion of a 170 acre parcel. The site is located on a sloping wooded area.

E. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The surrounding terrain ranges in elevation from 330’ AMSL to over 740’ AMSL. The majority of the surrounding area is covered with vegetation. A field investigation identified one on-site wetland approximately 79’ to the east of the proposal access drive.

F. LAND USE WITHIN 1/4 MILE OF SITE: Land uses within ¼ mile of the site are primarily residential, commercial, and a future sand & gravel mining operation.

III. FACILITIES

A. POWER COMPANY: Connecticut Light and Power

B. POWER PROXIMITY TO SITE: Facilities available from off site utility pole using a proposed riser pole.

C. TELEPHONE COMPANY: AT&T

D. PHONE SERVICE PROXIMITY: Same as power.

E. VEHICLE ACCESS TO SITE: Access to the facility would be provided over a new 12' wide gravel access drive approximately 958' to the site.

F. OBSTRUCTIONS: None

G. CLEARING AND FILL REQUIRED: The compound will require clearing and grading to level the area. Some filling may 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: Lawrence Becker

C. ADDRESS: Old South Willington Road, Willington, Connecticut

Candidate B: Facilities and Equipment Specification

I. TOWER SPECIFICATIONS:

A. MANUFACTURER: To be determined

B. TYPE: Self-Supporting monopole

C. HEIGHT: 190'
DIMENSIONS: Approximately 4½' in diameter at the base, tapering to approximately 2' at the top.

D. LIGHTING: None as set forth in attached TOWAIR report

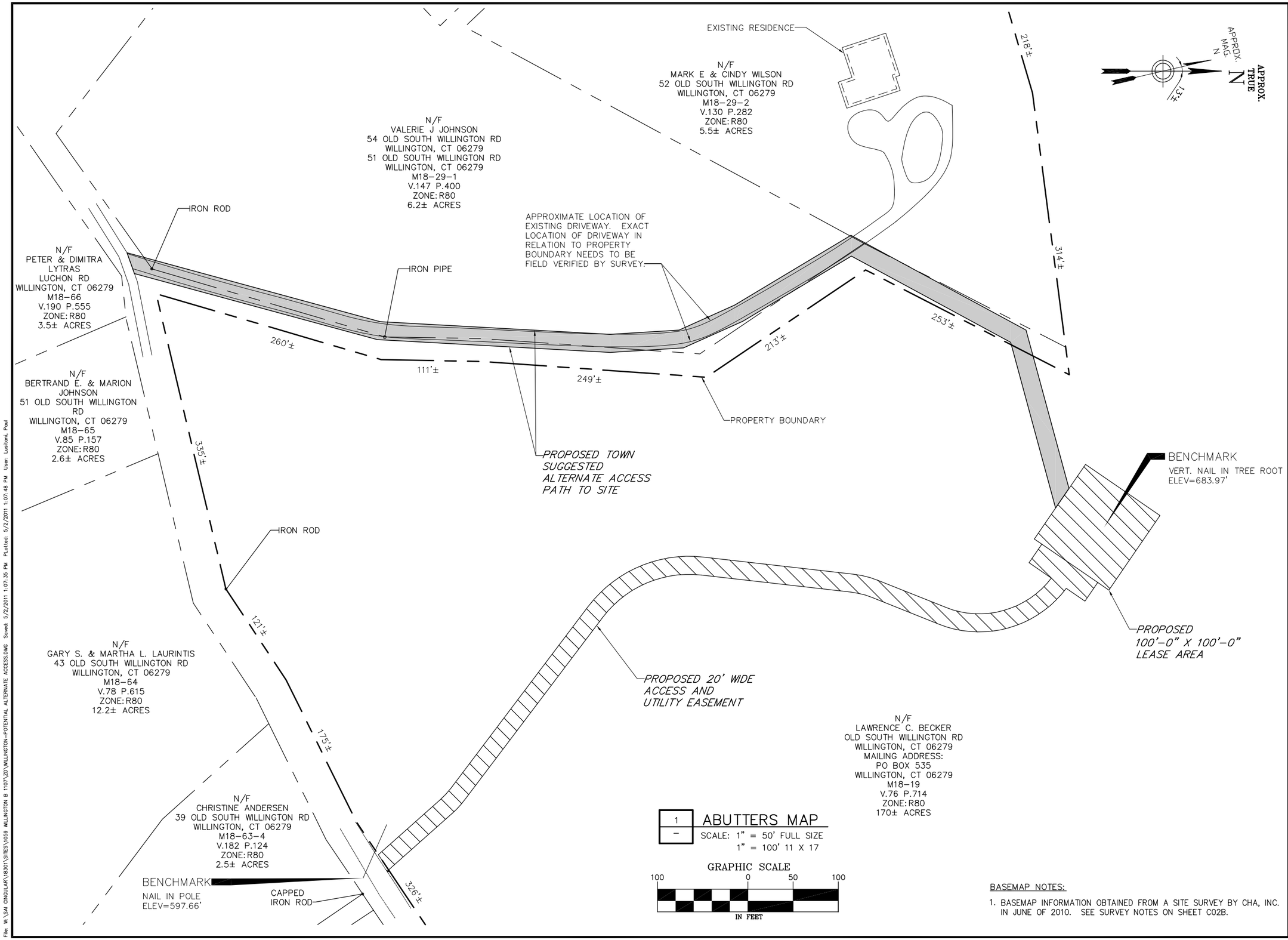
II. TOWER LOADING:

A. AT&T – up to 12 panel Antennas
a. Model – P90-14-XVH-RR or equivalent panel antenna
b. Antenna Dimensions – 48"H x 12"W x 6"D
c. Position on Tower – 157' centerline mounted on low profile platform
d. Transmission Lines – MFG/Model: Commscope Aluminum 1-5/8"

B. Future Carriers – 3 additional carriers can be accommodated.

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 would be provided as part of the final D&M plan.



1	ABUTTERS MAP
–	SCALE: 1" = 50' FULL SIZE 1" = 100' 11 X 17

BASEMAP NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A SITE SURVEY BY CHA, INC. IN JUNE OF 2010. SEE SURVEY NOTES ON SHEET C02B.

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CHA PROJECT NO:
18301 – 1059 – 43000

NO.	SUBMITTAL		
0	07/12/10 BY: JDM	ISSUED FOR CONSTRUCTION CHK: PAL	APP'D: JPS
1	04/13/11 BY: PAL	UPDATED ABUTTERS CHK: PAL	APP'D: JPS

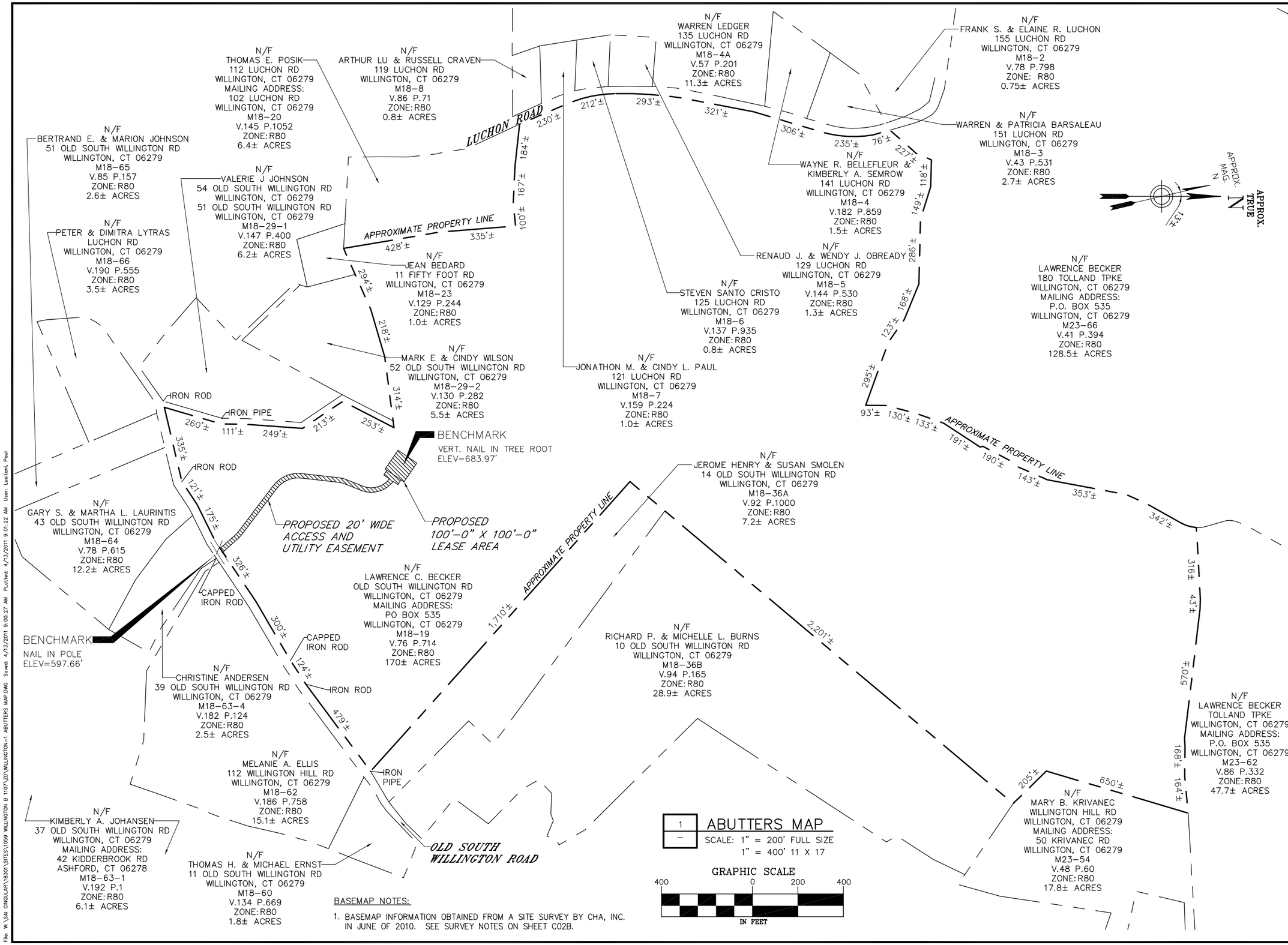
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE ID:
SR1107
SITE NAME:
WILLINGTON B
SITE ADDRESS:
OLD SOUTH WILLINGTON ROAD
WILLINGTON, CT 06279
TOLLAND COUNTY

SHEET TITLE
ABUTTERS MAP

SHEET NUMBER
C01

File: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\20\WILLINGTON-POTENTIAL ALTERNATE ACCESS.DWG Saved: 5/2/2011 1:07:35 PM Plotted: 5/2/2011 1:07:48 PM User: Lucitoni, Paul



1 ABUTTERS MAP
– SCALE: 1" = 200' FULL SIZE
1" = 400' 11 X 17

BASEMAP NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A SITE SURVEY BY CHA, INC. IN JUNE OF 2010. SEE SURVEY NOTES ON SHEET C02B.

File: W:\341 CINGULAR\18301\SITES\1059 WILLINGTON B 1107\20\WILLINGTON-1 ABUTTERS MAP.DWG Saved: 4/13/2011 9:00:27 AM Plotted: 4/13/2011 9:01:22 AM User: Lusitani, Paul

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1	04/13/11	UPDATED ABUTTERS	
	BY: PAL	CHK: PAL	APP'D: JPS

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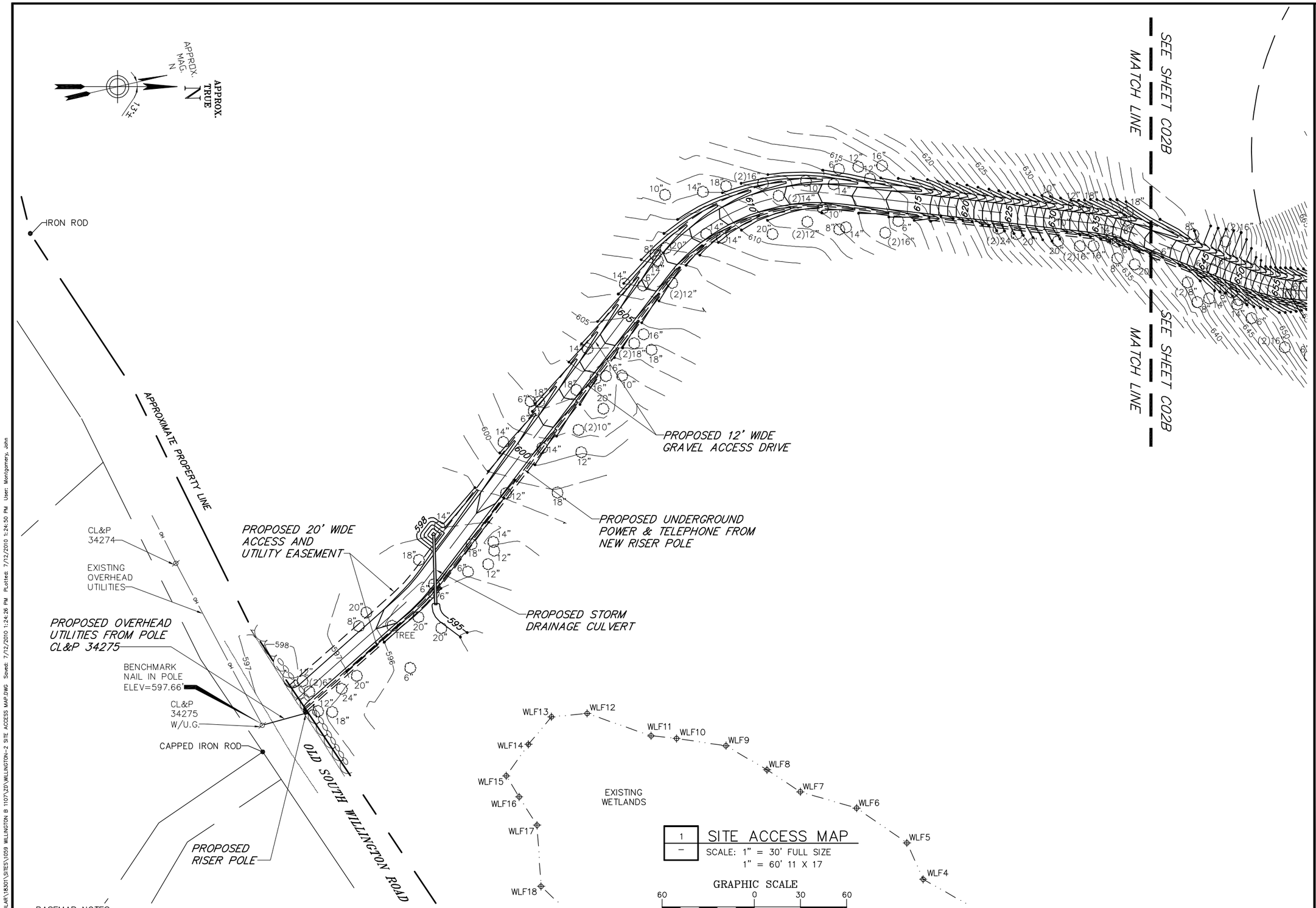
SITE ID:
SR1107
SITE NAME:
WILLINGTON B
SITE ADDRESS:
OLD SOUTH
WILLINGTON ROAD
WILLINGTON, CT 06279
TOLLAND COUNTY

SHEET TITLE
ABUTTERS
MAP

SHEET NUMBER
C01



1 SITE ACCESS MAP
– SCALE: 1" = 30' FULL SIZE
1" = 60' 11 X 17

BASEMAP NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A SITE SURVEY BY CHA, INC. IN JUNE OF 2010. SEE SURVEY NOTES ON SHEET C02B.

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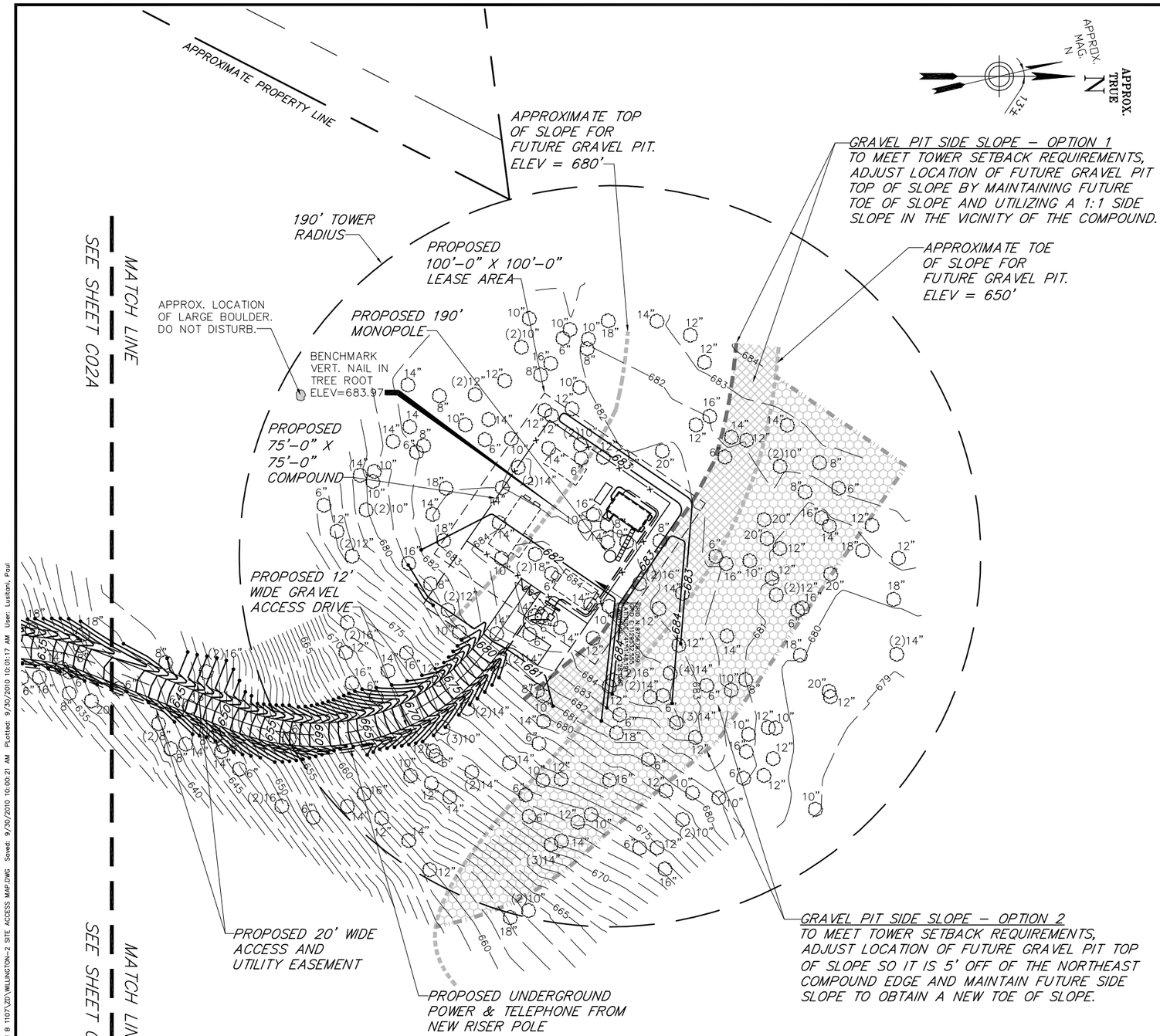
NO.	SUBMITTAL		
0	07/12/10	ISSUED FOR CONSTRUCTION	
	BY: JDM	CHK: PAL	APP'D: JPS

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

SITE ID:
SR1107
SITE NAME:
WILLINGTON B
SITE ADDRESS:
OLD SOUTH
WILLINGTON ROAD
WILLINGTON, CT 06279
TOLLAND COUNTY

SHEET TITLE
SITE ACCESS MAP

SHEET NUMBER
C02A



1	SITE ACCESS MAP
–	SCALE: 1" = 30' FULL SIZE 1" = 60' 11 X 17

GRAPHIC SCALE

60 0 30 60

IN FEET

SURVEY NOTES:

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20–300b–1 THROUGH 20–300b–20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC. ON SEPTEMBER 26, 1996. THE BOUNDARY LINES SHOWN ON THIS PLAN WERE COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.

TYPE OF SURVEY: COMPILATION PLAN

BOUNDARY DETERMINATION CATEGORY: NONE

CLASS OF ACCURACY: HORIZONTAL CLASS A–2
VERTICAL CLASS V–2
TOPOGRAPHIC CLASS T–2

2. PROPERTY LINE SHOWN HEREON ARE FROM RECORD DEEDS PLOTS AND TAX MAPS AS OVERLAID ON ANY MONUMENTATION OR OTHER EVIDENCE THAT MAY HAVE BEEN LOCATED DURING THE TOPOGRAPHIC SURVEY. A PROPERTY SURVEY WAS NOT PERFORMED BY CLOUGH HARBOUR & ASSOCIATES LLP AND AS A RESULT THE PROPERTY LINES SHOWN ARE APPROXIMATE AND DO NOT PRESENT A PROPERTY/BOUNDARY OPINION.

3. BASE MAPPING PREPARED BY CHA, INC. FROM A JUNE 2010 FIELD SURVEY.

4. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.

5. UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED FROM A FIELD SURVEY, THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED BY PROPER AUTHORITIES PRIOR TO ANY AND ALL CONSTRUCTION. CALL DIG SAFE PRIOR.

6. SUBJECT TO ANY STATEMENT OF FACTS THAT AN UP–TO–DATE ABSTRACT OF TITLE WOULD DISCLOSE.

7. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.

8. LATITUDE/LONGITUDE/ELEVATIONS WERE OBTAINED UTILIZING NGS CORS BASE STATION NAMED "CTGE". LATITUDE/LONGITUDE ARE REFERENCED TO NAD83 CONNECTICUT ZONE. COORDINATES SHOWN, IF ANY, ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS ARE REFERENCED TO NAVD88. TOP OF STRUCTURE HEIGHT AS SHOWN, IF ANY, DETERMINED BY VERTICAL ANGLE OR BY ACTUAL LOCATION. INFORMATION SHOWN BASED ON FAA 2C CERTIFICATION ACCURACY LEVEL DEFINED AS;
HORIZONTAL: ±50 FEET / 15 METERS
VERTICAL: ±20 FEET / 6 METERS

9. SITE FALLS WITHIN ZONE "C" DEFINED AS AREAS OF MINIMAL FLOODING AS SHOWN ON FLOOD INSURANCE RATE MAP, TOWN OF WILLINGTON, CONNECTICUT, TOLLAND COUNTY, PANEL 20 OF 20, COMMUNITY PANEL NUMBER 090159 0020 A, EFFECTIVE DATE JUNE 15, 1982.

10. WETLANDS SHOWN AS DELINATED BY VANASSE HANGEN BRUSTLIN, INC., DATED 6–04–10 AND LOCATED BY CHA AT THE TIME OF THE FIELD SURVEY.

MAP REFERENCES:

1. MAP ENTITLED "PERIMETER / TOPOGRAPHIC / SURVEY PROPOSED COMMERCIAL / INDUSTRIAL ROADWAY PREPARED FOR BECKER CONSTRUCTION COMPANY" SHEET 4 OF 4 AS PREPARED BY GARDNER & PETERSON ASSOCIATES, LLC DATED 12–31–2007 AND FILED IN THE WILLINGTON TOWN CLERKS OFFICE.

2. MAP ENTITLED "BOUNDARY SURVEY & SUBDIVISION PLAN – NANCY ANN LATHE & MURIEL S. NICHOLSON" AS PREPARED EVERETT GARDNER, DATED 10–29–1968 AND FILED IN THE WILLINGTON TOWN CLERKS OFFICE.

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NO.	SUBMITTAL		
0	07/12/10	ISSUED FOR CONSTRUCTION	
	BY: JDM	CHK: PAL	APP'D: JPS
1	09/30/10	ADDED BOULDER	
	BY: PAL	CHK: PAL	APP'D: JPS

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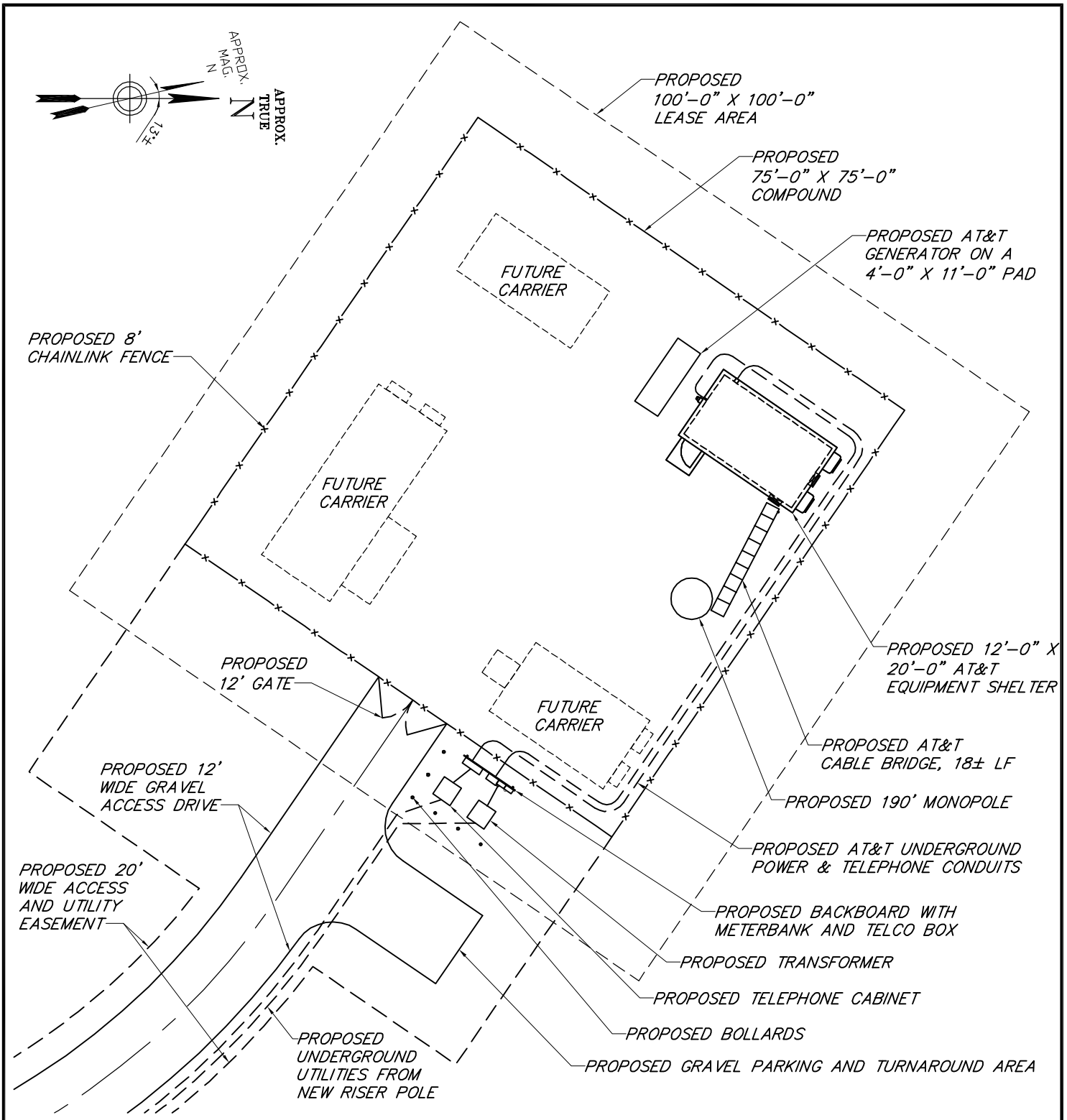
SITE ID:
SR1107
SITE NAME:
WILLINGTON B
SITE ADDRESS:
OLD SOUTH
WILLINGTON ROAD
WILLINGTON, CT 06279
TOLLAND COUNTY

SHEET TITLE
SITE ACCESS MAP

SHEET NUMBER
C02B

File: W:\SA\ CINGULAR\18301\SITES\1059 WILLINGTON B 1107\2D\WILLINGTON-2 SITE ACCESS MAP.DWG Saved: 9/30/2010 10:00:21 AM Plotted: 9/30/2010 10:01:17 AM User: Lurlani, Paul



BASEMAP NOTES:

1. BASEMAP INFORMATION OBTAINED FROM A SITE SURVEY BY CHA, INC. COMPLETED IN JUNE OF 2010. SEE SURVEY NOTES ON SHEET C02B.

1	COMPOUND PLAN
–	SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

IN FEET

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TOLLAND COUNTY

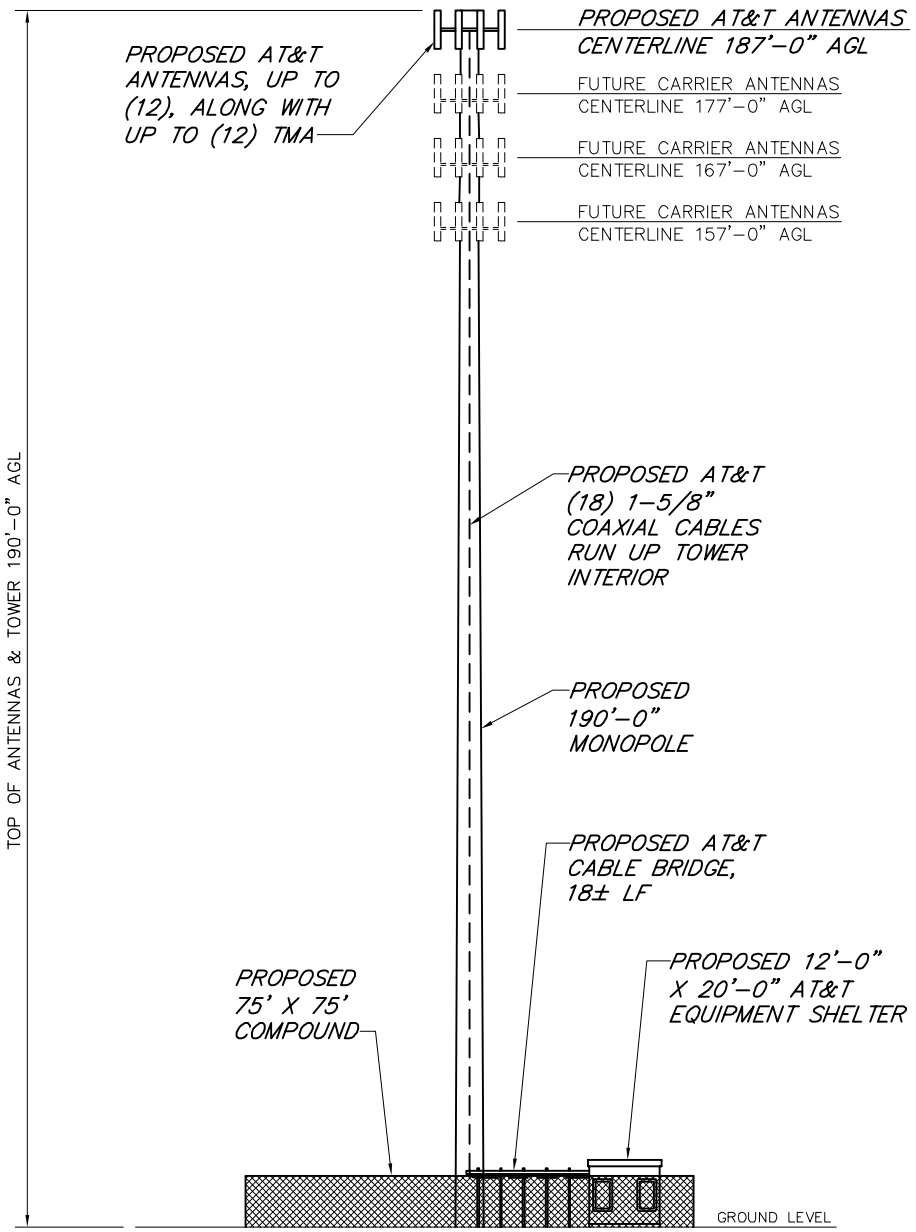
CHA PROJ. NO. – 18301-1059-43000

SHEET TITLE:
COMPOUND PLAN

DATE:
07/12/10

REVISION:
0

DATE: 7/12/2010 1:05 PM FILE: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\ZD\WILLINGTON-3 COMPOUND PLAN.DWG



1 TOWER ELEVATION

– SCALE: 1" = 30'

GRAPHIC SCALE

30 0 15 30

IN FEET

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TOLLAND COUNTY

CHA PROJ. NO. – 18301-1059-43000

SHEET TITLE:
TOWER ELEVATION

DATE:
07/12/10

REVISION:
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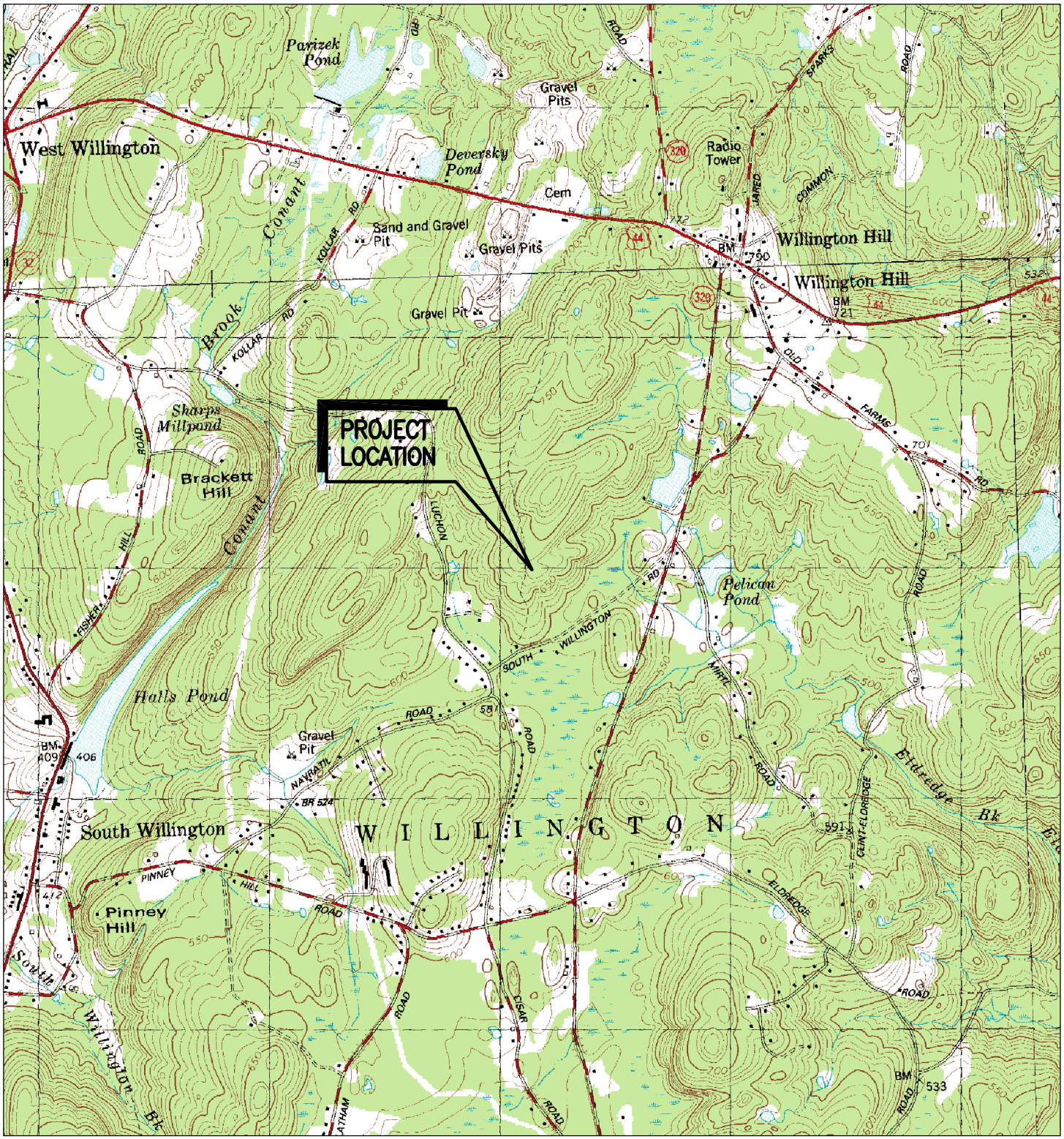
DATE: 7/12/2010 1:11 PM FILE: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\ZD\WILLINGTON-4 TOWER ELEVATION.DWG



1 1988 USGS TOPO MAP: COVENTRY 41072-G3

SCALE: 1" = 2000'

0 1000 2000

SCALE IN FEET

TRUE NORTH

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SR1107
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WILLINGTON, CT 06279
TOLLAND COUNTY

CHA PROJ. NO. – 18301-1059-43000

SHEET TITLE:
USGS TOPO MAP

DATE:
07/12/10

REVISION:
0

DATE: 7/9/2010 5:00 PM FILE: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\ZD\WILLINGTON-5 USGS.DWG

1 2004 AERIAL PHOTO

SCALE: 1" = 1000'

0 500 1000

SCALE IN FEET

TRUE NORTH

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WILLINGTON, CT 06279
TOLLAND COUNTY

CHA PROJ. NO. – 18301–1059–43000

SHEET TITLE:
AERIAL PHOTO

DATE:
07/12/10

REVISION:
0

DATE: 7/9/2010 4:56 PM FILE: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\ZD\WILLINGTON-6 AERIAL.DWG

Site Number: SR1107
Site Name: Willington B
Site Address: Old South Willington Road, Willington, CT 06279

Access distances:

Distance of access over existing asphalt driveway: 0'
Distance of access over new gravel driveway: 958'
Total distance of site access: 958'

Distance to Nearest Wetlands:

79' from nearest grading extents to WLF13

Distance to Property Lines:

1,004' to the northern property boundary
871' to the southern property boundary
190' to the western property boundary
771' to the eastern property boundary

Residence Information:

There are 8 residences within 1,000' feet of the tower. The closest residence is 550' to the southwest and is owned by Mark and Cindy Wilson and is located at 52 Old South Willington Road, Willington, CT.

Tree Removal Count:

See Tree Inventory Letter.

Distance to Nearest Town (Must notify town if less than 2,500'):

The nearest town to the proposed tower is Tolland, CT. The town boundary is 8,775' to the west.

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T 860.257.4557 • F 860.257.7514 • www.cloughharbour.com

July 12, 2010

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067

RE: Tree Inventory
Site: Willington B
Old South Willington Road
Willington, CT 06279
CHA # 15363-1059-43000

A site survey was completed at the subject site in June 2010. A requirement of the survey involved determining the location of all trees within the topographic survey area with a diameter at breast height of 6" or larger. As can be seen on the site access map, there are one-hundred fifteen (115) trees with a diameter of 6" or larger within the area of the proposed access road and compound which need to be removed for construction of the facility. The quantity and size of trees being removed is summarized in the below table:

Tree Diameter	Number of Trees to be Removed
6"	19
8"	10
10"	15
12"	16
14"	28
16"	11
18"	10
20"	4
24"	2
TOTAL	**115**

If you have any questions, comments or need further information, please do not hesitate to contact our office.

Very truly yours,

CLOUGH HARBOUR & ASSOCIATES LLP

Paul Lusitani

Paul Lusitani
Project Engineer

W:\SAI Cingular\18301\Sites\1059 Willington B 1107\ZD\WILLINGTON-10 TREE INVENTORY 07-09-10.doc

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ATTACHMENT 4(B)

Visual Resource Evaluation Report

Proposed Wireless Telecommunications Facility

Willington B
Old South Willington Road
Willington, Connecticut

Prepared for **New Cingular Wireless PCS, LLC**
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06057

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

August 2010

Visual Resource Evaluation

New Cingular Wireless PCS, LLC seeks approval from the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the construction of a wireless telecommunications facility ("Facility") to be located on property off Old South Willington Road in the Town of Willington, Connecticut (identified herein as the "host property"). This Visual Resource Evaluation was conducted to evaluate the visibility of the proposed Facility within a two-mile radius ("Study Area"). Attachment A contains a map that depicts the location of the proposed Facility and the limits of the Study Area.

Project Introduction

The proposed Facility includes the installation of a 190-foot tall monopole with associated ground equipment to be located at its base. Both the proposed monopole and ground equipment would be situated within a fence-enclosed compound. The proposed project area is located at approximately 684 feet Above Mean Sea Level (AMSL). Access to the Facility would be provided via a proposed 12-foot wide gravel access drive.

Site Description and Setting

Identified in the Town of Willington Tax Assessor's records as Map 18/Lot 19, the host property consists of approximately 170 acres of undeveloped, wooded land. The proposed Facility would be located on the southern portion of the host property, roughly 950 feet north of Old South Willington Road. Land use within the general vicinity of the proposed Facility site and host property consists primarily of low-density residential development to the west, south and east; and undeveloped woodlands to the north. In total, the Study Area features approximately 79 linear miles of roadways, including portions of Route 32, Route 74 and Route 320.

The topography within the Study Area is generally characterized by rolling hills with ground elevations ranging from approximately 330 feet AMSL to just over 740 feet AMSL. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species interspersed with stands of mature evergreen species and occupies approximately 6,576 acres of the 8,042-acre study area (82%). During the in-field activities associated with this analysis, a laser range finder was used to determine the average tree canopy height throughout the Study Area. Numerous trees were selected for measurement and the average tree canopy was determined to be 65 feet. The Study Area contains approximately 107 acres of surface water that includes portions of the Willimantic River, Fenton River, Halls Pond, Pelican Pond, Parizek Pond, Deversky Pond and several unnamed ponds.

■

METHODOLOGY

In order to represent the visibility associated with the Facility, VHB utilizes a two-fold approach incorporating both a predictive computer model and in-field analysis. The predictive model was employed to assess potential visibility throughout the entire Study Area, including private property and/or otherwise inaccessible areas for field verification. A balloon float and Study Area drive-through reconnaissance were also conducted to provide a height and locational representation, back check the computer model and obtain photographic documentation from publicly accessible areas. Results of the balloon float are analyzed and incorporated into the final viewshed map. A description of the methodologies used in the analysis is provided below.

Visibility Analysis

Using ESRI's ArcGIS® Spatial Analyst, a computer modeling tool, the areas from where the top of the Facility is expected to be visible are calculated. This is based on information entered into the computer model, including Facility height, its ground elevation, the surrounding topography and existing vegetation. Data incorporated into the predictive model includes a digital elevation model (DEM) and a digital forest layer for the Study Area. The DEM was derived from the Connecticut LiDAR-based digital elevation data. The LiDAR data was produced by the University of Connecticut Center for Land Use Education and Research (CLEAR) in 2007 and has a horizontal resolution of 10 feet. In order to create the forest layer, digital aerial photographs of the Study Area are incorporated into the computer model. The mature trees and woodland areas depicted on the aerial photos are manually traced in ArcGIS® GIS and then converted into a geographic data layer. The aerial photographs were produced in 2006 and have a pixel resolution of one foot.

Once the data layers are entered, a series of constraints are applied to the computer model to achieve an estimate of where the Facility will be visible. Initially, only topography was used as a visual constraint; the tree canopy is omitted to evaluate all areas of potential visibility without any vegetative screening. Although this is an overly conservative prediction, the initial omission of these layers assists in the evaluation of potential seasonal visibility of the proposed Facility. A conservative tree canopy height of 50 feet is then used to prepare a preliminary viewshed map for use during the Study Area reconnaissance. The average height of the tree canopy was determined in the field using a laser range finder. The average tree canopy height is incorporated into the final viewshed map; in this case, 65 feet was identified as the average tree canopy height. The forested areas within the Study Area were then overlaid on the DEM with a height of 65 feet added and the visibility calculated. As a final step, the forested areas are extracted from the areas of visibility, with the assumption that a person standing among the trees will not be able to view the Facility beyond a distance of approximately 500 feet. Depending on the density of the vegetation in these areas, it is assumed that some locations within this range will provide visibility of at least portions of the Facility based on where one is standing.

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. Lastly, based on both a review of published information and discussions with municipal staff in Willington, it was determined that there are no locally-or state-designated scenic roads contained within the Study Area.

The preliminary viewshed map (using topography and a conservative tree canopy height of 50 feet) is used during the in-field activity to assist in determining if significant land use changes have occurred since the aerial photographs used in this analysis were produced and to compare the results of the computer model with observations of the balloon float. Information obtained during the reconnaissance is then incorporated into the final visibility map.

Balloon Float and Study Area Reconnaissance

On July 13, 2010 Vanasse Hangen Brustlin Inc., (VHB) conducted a balloon float at the proposed Facility to further evaluate the potential viewshed within the Study Area. The balloon float consisted of raising and maintaining an approximate 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 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. During the balloon float, the temperature was approximately 85 degrees Fahrenheit with calm wind conditions and partly sunny skies.

Photographic Documentation

During the balloon float, VHB personnel drove the public road system within the Study Area to inventory those areas where the balloon was visible. The balloon was photographed from a number of different vantage points to document the actual view towards the proposed Facility. Locations where the balloon was not visible are also included in order to provide documentation. The locations of the photos are described below:

View	Location	Orientation	Dist. To Site	Visibility
1	Intersection of Y Road and Route 320	Southwest	± 0.50-Mile	Year-Round
2	Route 74 (Tolland Turnpike)	Southwest	± 0.98-Mile	Not Visible
3	Willington Town Green	Southwest	± 1.01-Mile	Not Visible
4	Willington Town Hall Parking Lot	Southwest	± 0.90-Mile	Not Visible
5	Willington Center School Parking Lot	Southwest	± 0.89-Mile	Not Visible

View	Location	Orientation	Dist. To Site	Visibility
6	Lindsey Lane Cul-de-Sac	Northeast	± 0.89-Mile	Not Visible
7	Adjacent to #4 Lindsey Lane	Northeast	± 0.35-Mile	Year-Round
8	Adjacent to #87 Luchon Road	Northeast	± 0.29-Mile	Not Visible
9	Willington Woods Senior Houseing – Old Farms Road	Southwest	± 0.89-Mile	Not Visible
10	Willington Hill Cemetery	South	± 1.05-Mile	Not Visible

Photographs of the balloon from the view points listed above were taken with a Nikon D-80 digital camera body and Nikon 18 to 135 mm zoom lens. For the purposes of this report, the lens was set to 50mm. "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.[1]"

The locations of the photographic points are recorded in the field using a hand-held GPS receiver and are subsequently plotted on the maps contained in the attachments to this document.

Photographic Simulation

Photographic simulations were generated for two representative locations where the balloon was visible during the in-field activities. The photographic simulations represent a scaled depiction of the proposed Facility (a monopole) from these locations. The height of the Facility is determined based on the location of the balloon and a proportional monopole image is simulated into the photographs. The simulations are contained in Attachment A.

CONCLUSIONS

Based on this analysis, areas from where a 190-foot tall tower would be visible above the tree canopy comprise approximately 20 acres, representing less than one half of one percent of the total land area contained within the 8,042- acre Study Area. As depicted on the attached viewshed map, most of the year-round visibility occurs over open water on undeveloped land, including a portion of an unnamed pond located west of Route 320 (approximately 0.40-mile to the northeast of the proposed Facility); part of a large wetland area approximately 0.5 south of the proposed Facility Site; and open land located between 0.50-mile and 0.80-mile to the north/northeast. The viewshed map also depicts areas of year-round visibility limited to select portions of Route 320 and Lindsey Lane as well as several small areas located on portions of private properties to the north and southeast of the proposed Facility that were inaccessible to VHB field personnel for verification during the Study Area reconnaissance. As evidenced by the results of the balloon float and viewshed modeling conducted as part of this analysis, the intervening topography and abundance of

[1] Warren, Bruce. *Photography*, West Publishing Company, Eagan, MN, c. 1993, (page 70).

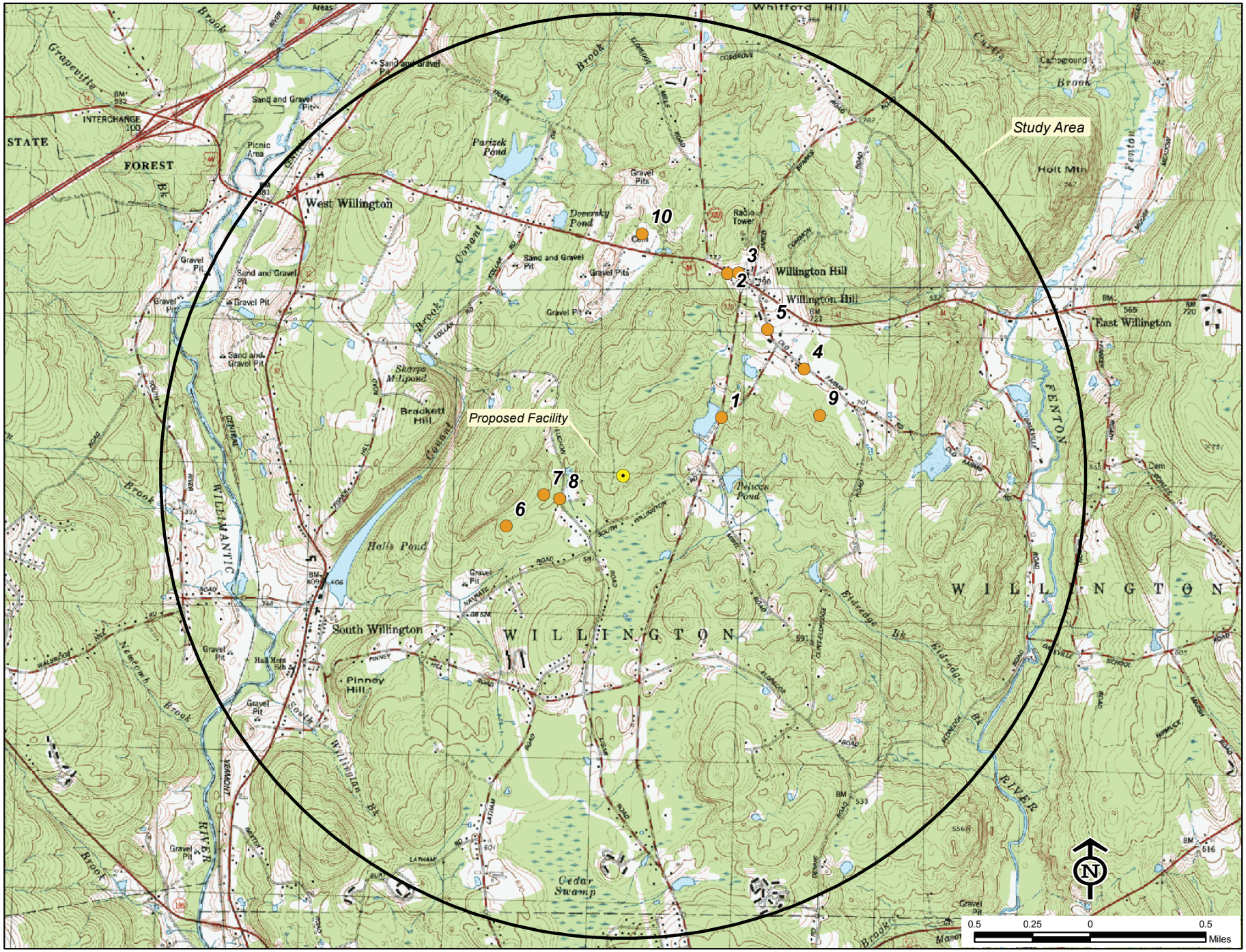
mature trees and other vegetation contained within the Study Area serve to confine potential year-round views to the areas described above. VHB estimates that select portions of approximately six (6) residential properties within the Study Area may have at least partial year-round views of the proposed Facility. This includes two (2) properties located along Route 320 to the northeast of the proposed Facility; one (1) residential property off Mirtl Road located approximately 0.50-mile to the southeast; one (1) property located along Luchon Road approximately 0.20-mile to the southwest; one (1) parcel located along Glass Factory Road approximately 1.40-mile to the northwest; and one (1) property located off Lindsey Lane located roughly 0.34-mile to the southwest.

The viewshed map also depicts additional areas where seasonal (i.e. during "leaf off" conditions) views through the trees are anticipated. These areas comprise approximately 18 additional acres are generally limited to the vicinity of the host property. VHB estimates that seasonal views may be achieved from select portions of approximately three (3) residential properties located within the Study Area. This includes one (1) residential property located off Route 320; (1) property located along Luchon Road and (1) property located off Old South Willington Road.

Attachment A

Photolog Documentation Map, Balloon Float Photographs, and Photographic Simulations

PHOTOLOG MAP



ctmidda\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

PHOTOGRAPHIC DOCUMENTATION

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	INTERSERCTION OF Y ROAD AND ROUTE 320	SOUTHWEST	0.50 MILE +/-	YEAR-ROUND

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

AT&T

VHB

MONOPOLE - 190 FT

PHOTOGRAPHIC SIMULATION

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	INTERSERCTION OF Y ROAD AND ROUTE 320	SOUTHWEST	0.50 MILE +/-	YEAR-ROUND

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	ROUTE 74 (TOLLAND TURNPIKE)	SOUTHWEST	0.98 MILE +/-	NON-VISIBLE

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	WILLINGTON TOWN GREEN	SOUTHWEST	1.01 MILES +/-	NON-VISIBLE

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	WILLINGTON TOWN HALL PARKING LOT	SOUTHWEST	0.90 MILE +/-	NON-VISIBLE

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	WILLINGTON CENTER SCHOOL PARKING LOT	SOUTHWEST	0.89 MILE +/-	NON-VISIBLE

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	LINDSEY LANE CUL-DE-SAC	NORTHEAST	0.89 MILE +/-	NON-VISIBLE

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	ADJACENT TO #4 LINDSEY LANE	NORTHEAST	0.35 MILE +/-	YEAR-ROUND

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

MONOPOLE - 190 FT

PHOTOGRAPHIC SIMULATION

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	ADJACENT TO #4 LINDSEY LANE	NORTHEAST	0.35 MILE +/-	YEAR-ROUND

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	ADJACENT TO #97 LUCHON ROAD	NORTHEAST	0.29 MILE +/-	NON-VISIBLE

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

AT&T

VHB

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
9	WILLINGTON WOODS SENIOR HOUSING - OLD FARMS ROAD	SOUTHWEST	0.89 MILE +/-	NON-VISIBLE

ctmidda\141502.10_PHOTOSIM\graphics\FIGURES\141502.10_PHOTOSIM.indd

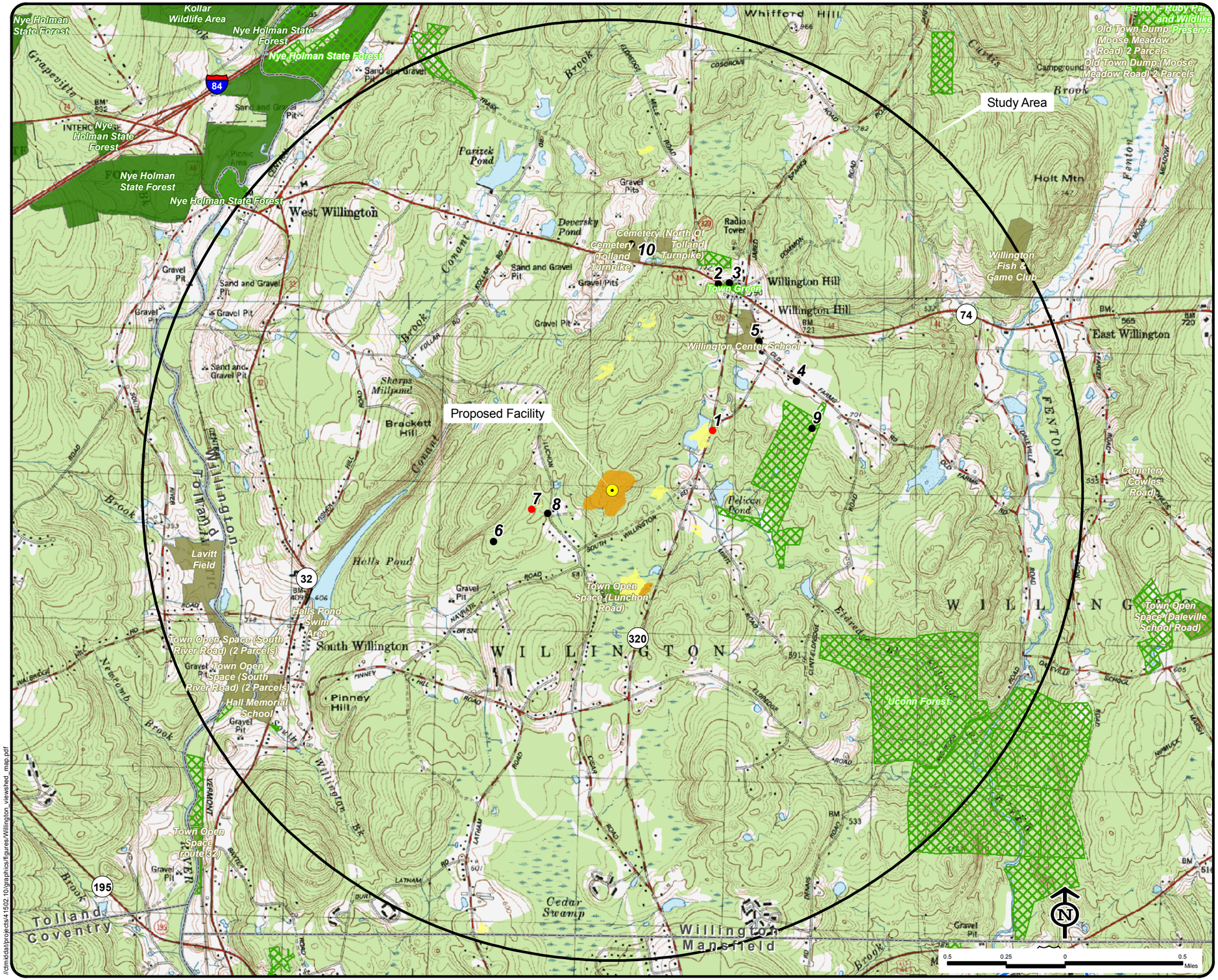
VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	WILLINGTON HILL CEMETERY	SOUTH	1.05 MILES +/-	NON-VISIBLE

ctmiddat\41502.10_PHOTOSIM\graphics\FIGURES\41502.10_PHOTOSIM.indd

Attachment B

Viewshed Map

Viewshed Analysis
Proposed AT&T Wireless Telecommunications Facility
Willington B
Old South Willington Road
Willington, 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
- Base map comprised of Coventry (1983), Spring Hill (1983), Westford (1983) and Stafford Springs (1983) 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 Protected Open Space Mapping (POSM) data layer provided by CT DEP, Dec 2009
- CT DEP boat launches data layer provided by CT DEP, Dec 2009
- Scenic Roads layer derived from available State and Local listings

Map Compiled August, 2010

Legend

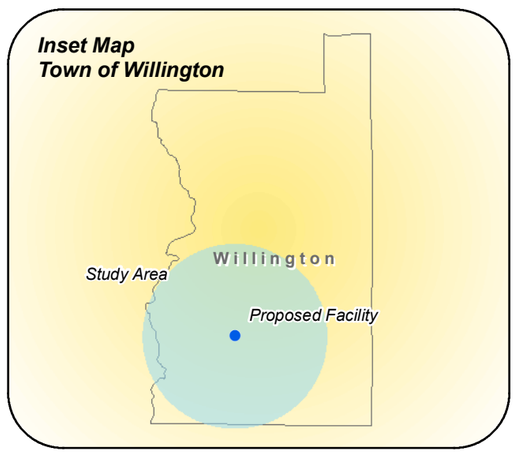
- Proposed Tower Location

Photographs - July 13, 2010
- Balloon is not visible
- Balloon visible above trees

- Seasonal Visibility Area (Approximately 18 acres)
- Year-Round Visibility Area (Approximately 20 acres)

- Protected Municipal and Private Open Space (CT DEP, 1997)
  - Cemetery
  - Preservation
  - Conservation
  - Existing Preserved Open Space
  - Recreation
  - General Recreation
  - School
  - Uncategorized
- CT DEP Property (CT DEP, May 2010)
  - State Forest
  - State Park
  - DEP Owned Waterbody
  - State Park Scenic Reserve
  - Historic Preserve
  - Natural Area Preserve
  - Fish Hatchery
  - Flood Control
  - Other
  - State Park Trail
  - Water Access
  - Wildlife Area
  - Wildlife Sanctuary
- Protected Open Space Mapping (POSM) Area (CT DEP, Dec 2009)
- Federal Open Space (CT DEP, 2004)
- Boat Launches (CT DEP, Dec 2009)
- Scenic Road (State and Local)
- Town Line

Inset Map
Town of Willington



VHB at&t

//cmddata/projects/41502.10/graphics/figures/Willington_viewshed_map.pdf

ATTACHMENT 4(C)

Candidate 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 no effect on any watercourses or water bodies. Best Management Practices to control storm water and soil erosion during construction will be implemented. The equipment associated with the facility will discharge no pollutants to area surface or groundwater systems.

B. AIR QUALITY

Under ordinary operating conditions, the telecommunications equipment that would be used at the proposed facility would emit no air pollutants of any kind. Infrequent use of a generator would result in a small amount of emissions.

C. LAND

Some clearing and grading will be necessary in the compound area and access drive and best management practices implemented for any steep slopes. 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 as well as a proposed generator to be used during power outages. 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 3.62% of the MPE standard. Attached is a copy of AT&T's Power Density Report dated September 20, 2010.

F. VISIBILITY

The potential visual impact of the proposed facility was determined by preparation of the attached Visual Resource Evaluation Report prepared by Vanasse Hangen Brustlin, Inc. The potential visibility of the proposed monopole was assessed within an approximate

two-mile radius using a computer-based, predictive view shed model and in-field visual analysis. As shown in the report and photo simulations, only 20 acres (less than one half of 1%) of the 8,042-acre study area would have views of the proposed tower above the tree canopy. The proposed monopole would not be visible from the Willington Town Green. There is intervening topography and vegetation in the area that serve to limit visibility.

II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

The parcel on which the facility is located exhibits no unique scenic, natural, historic or recreational characteristics. The Connecticut State Historic Preservation Officer ("SHPO") determined that the proposed project will have no effect on archeological or historic resources. Additionally, the Connecticut Department of Environmental Protection Natural Diversity Database ("NDDB") map for the project area has been reviewed by the DEP and determined that there are no nearby threatened or endangered species present and accordingly no such impacts on same are anticipated.

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	41-51-48.3 north
Longitude	072-16-28.3 west
Measurements (Meters)	
Overall Structure Height (AGL)	57.9
Support Structure Height (AGL)	NaN
Site Elevation (AMSL)	207.9

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

Tony Wells
C Squared Systems
920 Candia Road
Manchester, NH 03109
603-657-9702
Tony.Wells@csquaredsystems.com

C Squared Systems, LLC

September 20, 2010

Connecticut Siting Council

Subject: New Cingular Wireless, Willington, 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 at Old South Willington Road, Willington, 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^2)	Limit	% FCC MPE Limit General Public/ Uncontrolled
Ground Level	AT&T UMTS	187	880	1	500	0.0055	0.5867	0.94%
	AT&T UMTS	187	1900	1	500	0.0055	1.0000	0.55%
	AT&T GSM	187	880	3	296	0.0098	0.5867	1.66%
	AT&T GSM	187	1900	1	427	0.0047	1.0000	0.47%
							Total	**3.62%**

Summary: Under worst-case assumptions, the RF Power Density at the proposed site located at Old South Willington Road, Willington, CT will not exceed 3.62% of the FCC MPE limit for General Public/Uncontrolled Environments.

Sincerely,

anthony wells

Anthony Wells
Managing Partner

Transportation
Land Development
Environmental
Services

VHB imagination | innovation | energy Creating results for our clients and benefits for our communities

WETLANDS DELINEATION REPORT

Vanasse Hangen Brustlin, Inc.

Date: September 2, 2010

Project No.: 41502.10

Prepared For: Mr. David Vivian
New Cingular Wireless PCS, LLC
500 Enterprise Drive, Suite 3A
Rocky Hill, Connecticut, 06067

Site Location: Willington B - Old South Willington Road, Willington, Connecticut

Site Map: Wetland Sketch, dated June 4, 2010

Inspection Date: June 4, 2010

Field Conditions: Weather: partly cloudy, mid 80's
Snow Depth: 0 inches
General Soil Moisture: moist
Frost Depth: 0 inches

Type of Wetlands Identified and Delineated:

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

Local Regulated Upland Review Areas: Wetlands: 100 feet Watercourses: 100 feet

Field Numbering Sequence of Wetlands Boundary: Connecticut - WF 1 to 20
[as depicted on attached wetland sketch map]

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

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

The wetlands delineation was conducted and reviewed by:

Dean Gustafson
Professional Soil Scientist

Enclosures

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

Attachments

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

Wetland Delineation Field Form

Project Address:	Old South Willington Road Willington, Connecticut	Project Number:	41502.10
Inspection Date:	June 4, 2010	Inspector:	Dean Gustafson, PSS
Wetland I.D.:	Wetland 1		

Field Conditions:	Weather: partly cloudy, mid 80's	Snow Depth: 0 inches
	General Soil Moisture: moist	Frost Depth: 0 inches
Type of Wetland Delineation:	Connecticut ☒	
	ACOE ☐	
	Tidal ☐	
Field Numbering Sequence: WF 1 to 20		

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments:		

TIDAL

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: N/A		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments:		

CLASS:

Emergent ☐	Scrub-shrub ☐	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: typical red maple swamp		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☒	Tidal ☐
Comments: intermittent channel forms at the northeastern end of the delineated wetland		

SPECIAL AQUATIC HABITAT:

Vernal Pool ☒	Other ☐	
Comments: depressions in hummock-hollow microtopography provide vernal pool habitat		

Wetland Delineation Field Form (Cont.)

MAPPED SOILS:

SOIL SERIES (Map Unit Symbol)	WET	UP	NRCS MAPPED	FIELD IDD/ CONFIRMED
Ridgebury, Leicester, and Whitman soils, extremely stony (3)	☒	☐	☒	☒
Sutton fine sandy loam (52)	☐	☒	☒	☒
Canton and Charlton soils (61)	☐	☒	☒	☒
Charlton-Chatfield complex (73)	☐	☒	☒	☒

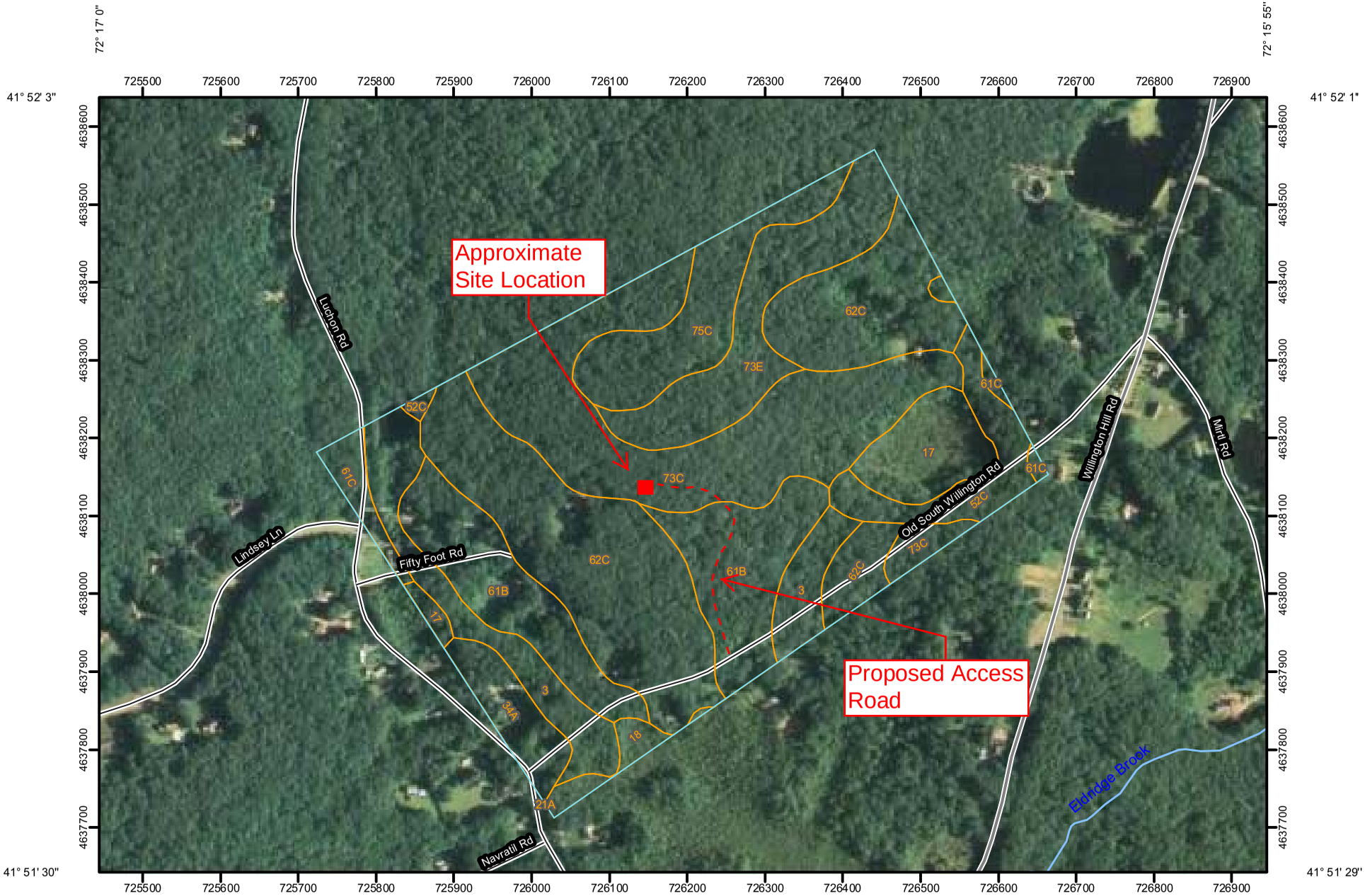
DOMINANT PLANTS:

red maple (*Acer rubrum*)	eastern hemlock (*Tsuga Canadensis*)
pepperbush (*Clethra alnifolia*)	highbush blueberry (*Vaccinium corymbosum*)
skunk cabbage (*Symplocarpus foetidus*)	sensitive fern (*Onoclea sensibilis*)
cinnamon fern (*Osmunda cinnamomea)*	

WETLAND NARRATIVE:

Wetland 1 is a forested swamp located approximately 100 feet east of the proposed access road and approximately 500 feet southeast of the proposed AT&T Willington B wireless telecommunications facility. The red maple swamp is a typical forested wetland community located along upland forest communities. The wetland is bound to the south by Old South Willington Road and continues off property to the northeast. During site inspection small shallow pools that appear to be seasonally inundated were noted. The pools, found to be approximately 6 to 10 inches deep at the time of the inspection, provide vernal pool habitat to a variety of amphibian species. Adult green grogs were seen within the pools along with spotted salamander egg masses. Northern grey tree frogs were also heard chorusing from within the interior of the wetland system.

Soil Map—State of Connecticut
(Becker Property, Old South Willington Road, WIllington, CT)



Map Scale: 1:7,120 if printed on A size (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 350 700 1,400 2,100

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

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

Gully

Short Steep Slope

Other

Political Features

Cities

Water Features

Oceans

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:7,120 if printed on A size (8.5" × 11") sheet.

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

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 7, Dec 3, 2009

Date(s) aerial images were photographed: 8/16/2006

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

State of Connecticut (CT600)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	8.6	8.5%
17	Timakwa and Natchaug soils	4.8	4.8%
18	Catden and Freetown soils	1.3	1.3%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	0.0	0.0%
34A	Merrimac sandy loam, 0 to 3 percent slopes	3.1	3.1%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	4.7	4.6%
61B	Canton and Charlton soils, 3 to 8 percent slopes, very stony	14.7	14.5%
61C	Canton and Charlton soils, 8 to 15 percent slopes, very stony	1.9	1.9%
62C	Canton and Charlton soils, 3 to 15 percent slopes, extremely stony	26.2	25.9%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	19.9	19.7%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	8.9	8.8%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	7.0	6.9%
Totals for Area of Interest		**101.1**	**100.0%**

Map Unit Description (Brief)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the selected area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit. A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The "Map Unit Description (Brief)" report gives a brief, general description of the major soils that occur in a map unit. Descriptions of nonsoil (miscellaneous areas) and minor map unit components may or may not be included. This description is written by the local soil scientists responsible for the respective soil survey area data. A more detailed description can be generated by the "Map Unit Description" report.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief)

State of Connecticut

Description Category: SOI

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

Ridgebury, Leicester And Whitman Soils, Extremely Stony This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 50 inches (940 to 1270 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 40 percent Ridgebury soils, 35 percent Leicester soils, 15 percent Whitman soils. 10 percent minor components. Ridgebury soils This component occurs on upland drainageway and depression landforms. The parent material consists of lodgement till derived from granite, schist, and gneiss. The slope ranges from 0 to 5 percent and the runoff class is very low. The depth to a restrictive feature is 20 to 30 inches to densic material. The drainage class is poorly drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 2.5 inches (low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 3 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; slightly decomposed plant material 1 to 5 inches; fine sandy loam 5 to 14 inches; fine sandy loam 14 to 21 inches; fine sandy loam 21 to 60 inches; sandy loam Leicester soils This component occurs on upland drainageway and depression landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 0 to 5 percent and the runoff class is very low. The depth to a restrictive feature is greater than 60 inches. The drainage class is poorly drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 7.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 9 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; moderately decomposed plant material 1 to 7 inches; fine sandy loam 7 to 10 inches; fine sandy loam 10 to 18 inches; fine sandy loam 18 to 24 inches; fine sandy loam 24 to 43 inches; gravelly fine sandy loam 43 to 65 inches; gravelly fine sandy loam Whitman soils This component occurs on upland drainageway and depression landforms. The parent material consists of lodgement till derived from gneiss, schist, and granite. The slope ranges from 0 to 2 percent and the runoff class is very low. The depth to a restrictive feature is 12 to 20 inches to densic material. The drainage class is very poorly drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 1.9 inches (very low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is occasional. The minimum depth to a seasonal water table, when present, is about 0 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; slightly decomposed plant material 1 to 9 inches; fine sandy loam 9 to 16 inches; fine sandy loam 16 to 22 inches; fine sandy loam 22 to 60 inches; fine sandy loam

Map Unit: 17—Timakwa and Natchaug soils

Timakwa And Natchaug Soils This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 40 to 50 inches (1016 to 1270 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Timakwa soils, 40 percent Natchaug soils. 15 percent minor components. Timakwa soils This component occurs on depression landforms. The parent material consists of woody organic material over sandy and gravelly glaciofluvial deposits. The slope ranges from 0 to 2 percent and the runoff class is negligible. The depth to a restrictive feature is greater than 60 inches. The drainage class is very poorly drained. The slowest permeability within 60 inches is about 5.95 in/hr (rapid), with about 16.2 inches (very high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 3.9 LEP (moderate). The flooding frequency for this component is rare. The ponding hazard is frequent. The minimum depth to a seasonal water table, when present, is about 4 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 5w Typical Profile: 0 to 10 inches; muck 10 to 21 inches; muck 21 to 24 inches; muck 24 to 37 inches; muck 37 to 47 inches; very gravelly loamy coarse sand 47 to 60 inches; gravelly loamy very fine sand Natchaug soils This component occurs on depression landforms. The parent material consists of woody organic material over loamy alluvium, loamy glaciofluvial deposits, or loamy till. The slope ranges from 0 to 2 percent and the runoff class is negligible. The depth to a restrictive feature is greater than 60 inches. The drainage class is very poorly drained. The slowest permeability within 60 inches is about 0.20 in/hr (moderately slow), with about 15.6 inches (very high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 3.9 LEP (moderate). The flooding frequency for this component is rare. The ponding hazard is frequent. The minimum depth to a seasonal water table, when present, is about 0 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 5w Typical Profile: 0 to 2 inches; peat 2 to 4 inches; peat 4 to 6 inches; muck 6 to 11 inches; muck 11 to 18 inches; muck 18 to 24 inches; muck 24 to 33 inches; fine sandy loam 33 to 36 inches; fine sandy loam 36 to 80 inches; loam

Map Unit: 18—Catden and Freetown soils

Catden And Freetown Soils This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 32 to 47 inches (813 to 1194 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 40 percent Catden soils, 40 percent Freetown soils. 20 percent minor components. Catden soils This component occurs on depression landforms. The parent material consists of woody and herbaceous organic material. The slope ranges from 0 to 2 percent and the runoff class is negligible. The depth to a restrictive feature is greater than 60 inches. The drainage class is very poorly drained. The available water capacity is about 24.4 inches (very high). The weighted average shrink-swell potential in 10 to 60 inches is about 10.0 LEP (very high). The flooding frequency for this component is rare. The ponding hazard is frequent. The minimum depth to a seasonal water table, when present, is about 0 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 5w Typical Profile: 0 to 2 inches; muck 2 to 18 inches; muck 18 to 47 inches; muck 47 to 49 inches; muck 49 to 61 inches; muck Freetown soils This component occurs on depression landforms. The parent material consists of woody and herbaceous organic material. The slope ranges from 0 to 2 percent and the runoff class is negligible. The depth to a restrictive feature is greater than 60 inches. The drainage class is very poorly drained. The available water capacity is about 33.1 inches (very high). The weighted average shrink-swell potential in 10 to 60 inches is about 10.0 LEP (very high). The flooding frequency for this component is rare. The ponding hazard is frequent. The minimum depth to a seasonal water table, when present, is about 0 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 5w Typical Profile: 0 to 4 inches; peat 4 to 10 inches; peat 10 to 22 inches; muck 22 to 35 inches; muck 35 to 41 inches; muck 41 to 55 inches; muck 55 to 71 inches; muck 71 to 91 inches; muck

Map Unit: 21A—Ninigret and Tisbury soils, 0 to 5 percent slopes

Ninigret And Tisbury Soils, 0 To 5 Percent Slopes This map unit is in the Connecticut Valley Major Land Resource Area. The mean annual precipitation is 35 to 50 inches (889 to 1270 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 60 percent Ninigret soils, 25 percent Tisbury soils. 15 percent minor components. Ninigret soils This component occurs on valley and outwash plain terrace landforms. The parent material consists of eolian deposits over glaciofluvial deposits derived from schist, granite, and gneiss. The slope ranges from 0 to 5 percent and the runoff class is very low. The depth to a restrictive feature is greater than 60 inches. The drainage class is moderately well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.2 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 24 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 2w Typical Profile: 0 to 8 inches; fine sandy loam 8 to 16 inches; fine sandy loam 16 to 26 inches; fine sandy loam 26 to 65 inches; stratified very gravelly coarse sand to loamy fine sand Tisbury soils This component occurs on valley and outwash plain terrace landforms. The parent material consists of eolian deposits over sand and gravel. The slope ranges from 0 to 3 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is moderately well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.6 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 24 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 2w Typical Profile: 0 to 8 inches; silt loam 8 to 18 inches; silt loam 18 to 26 inches; silt loam 26 to 60 inches; stratified very gravelly sand to loamy sand

Map Unit: 34A—Merrimac sandy loam, 0 to 3 percent slopes

Merrimac Sandy Loam, 0 To 3 Percent Slopes This map unit is in the New England and Eastern New York Upland, Southern Part Connecticut Valley Major Land Resource Area. The mean annual precipitation is 32 to 50 inches (813 to 1270 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 80 percent Merrimac soils. 20 percent minor components. Merrimac soils This component occurs on valley outwash plain, terrace, and kame landforms. The parent material consists of sandy glaciofluvial deposits derived from schist, granite, and gneiss. The slope ranges from 0 to 3 percent and the runoff class is very low. The depth to a restrictive feature is greater than 60 inches. The drainage class is somewhat excessively drained. The lowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 4.0 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 1 Typical Profile: 0 to 9 inches; sandy loam 9 to 16 inches; sandy loam 16 to 24 inches; gravelly sandy loam 24 to 60 inches; stratified very gravelly coarse sand to gravelly sand

Map Unit: 52C—Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony

Sutton Fine Sandy Loam, 2 To 15 Percent Slopes, Extremely Stony This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 80 percent Sutton soils. 20 percent minor components. Sutton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 2 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is moderately well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 7.3 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 24 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; moderately decomposed plant material 1 to 6 inches; fine sandy loam 6 to 12 inches; fine sandy loam 12 to 24 inches; fine sandy loam 24 to 28 inches; fine sandy loam 28 to 36 inches; gravelly fine sandy loam 36 to 65 inches; gravelly sandy loam

Map Unit: 61B—Canton and Charlton soils, 3 to 8 percent slopes, very stony

Canton And Charlton Soils, 3 To 8 Percent Slopes, Very Stony This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Canton soils, 35 percent Charlton soils. 20 percent minor components Canton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 3 to 8 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 5.6 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 1 inches; moderately decomposed plant material 1 to 3 inches; gravelly fine sandy loam 3 to 15 inches; gravelly loam 15 to 24 inches; gravelly loam 24 to 30 inches; gravelly loam 30 to 60 inches; very gravelly loamy sand Charlton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 3 to 8 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 4 inches; fine sandy loam 4 to 7 inches; fine sandy loam 7 to 19 inches; fine sandy loam 19 to 27 inches; gravelly fine sandy loam 27 to 65 inches; gravelly fine sandy loam

Map Unit: 61C—Canton and Charlton soils, 8 to 15 percent slopes, very stony

Canton And Charlton Soils, 8 To 15 Percent Slopes, Very Stony This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Canton soils, 35 percent Charlton soils. 20 percent minor components Canton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 8 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 5.6 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 1 inches; moderately decomposed plant material 1 to 3 inches; gravelly fine sandy loam 3 to 15 inches; gravelly loam 15 to 24 inches; gravelly loam 24 to 30 inches; gravelly loam 30 to 60 inches; very gravelly loamy sand Charlton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 8 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 4 inches; fine sandy loam 4 to 7 inches; fine sandy loam 7 to 19 inches; fine sandy loam 19 to 27 inches; gravelly fine sandy loam 27 to 65 inches; gravelly fine sandy loam

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

Canton And Charlton Soils, 3 To 15 Percent Slopes, Extremely Stony This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Canton soils, 35 percent Charlton soils. 20 percent minor components. Canton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 5.6 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; moderately decomposed plant material 1 to 3 inches; gravelly fine sandy loam 3 to 15 inches; gravelly loam 15 to 24 inches; gravelly loam 24 to 30 inches; gravelly loam 30 to 60 inches; very gravelly loamy sand Charlton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 4 inches; fine sandy loam 4 to 7 inches; fine sandy loam 7 to 19 inches; fine sandy loam 19 to 27 inches; gravelly fine sandy loam 27 to 65 inches; gravelly fine sandy loam

Map Unit: 73C—Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky

Charlton-Chatfield Complex, 3 To 15 Percent Slopes, Very Rocky This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Charlton soils, 30 percent Chatfield soils. 25 percent minor components. Charlton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 4 inches; fine sandy loam 4 to 7 inches; fine sandy loam 7 to 19 inches; fine sandy loam 19 to 27 inches; gravelly fine sandy loam 27 to 65 inches; gravelly fine sandy loam Chatfield soils This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from gneiss, granite, and schist. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 3.3 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 1 inches; highly decomposed plant material 1 to 6 inches; gravelly fine sandy loam 6 to 15 inches; gravelly fine sandy loam 15 to 29 inches; gravelly fine sandy loam 29 to 36 inches; unweathered bedrock

Map Unit: 73E—Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky

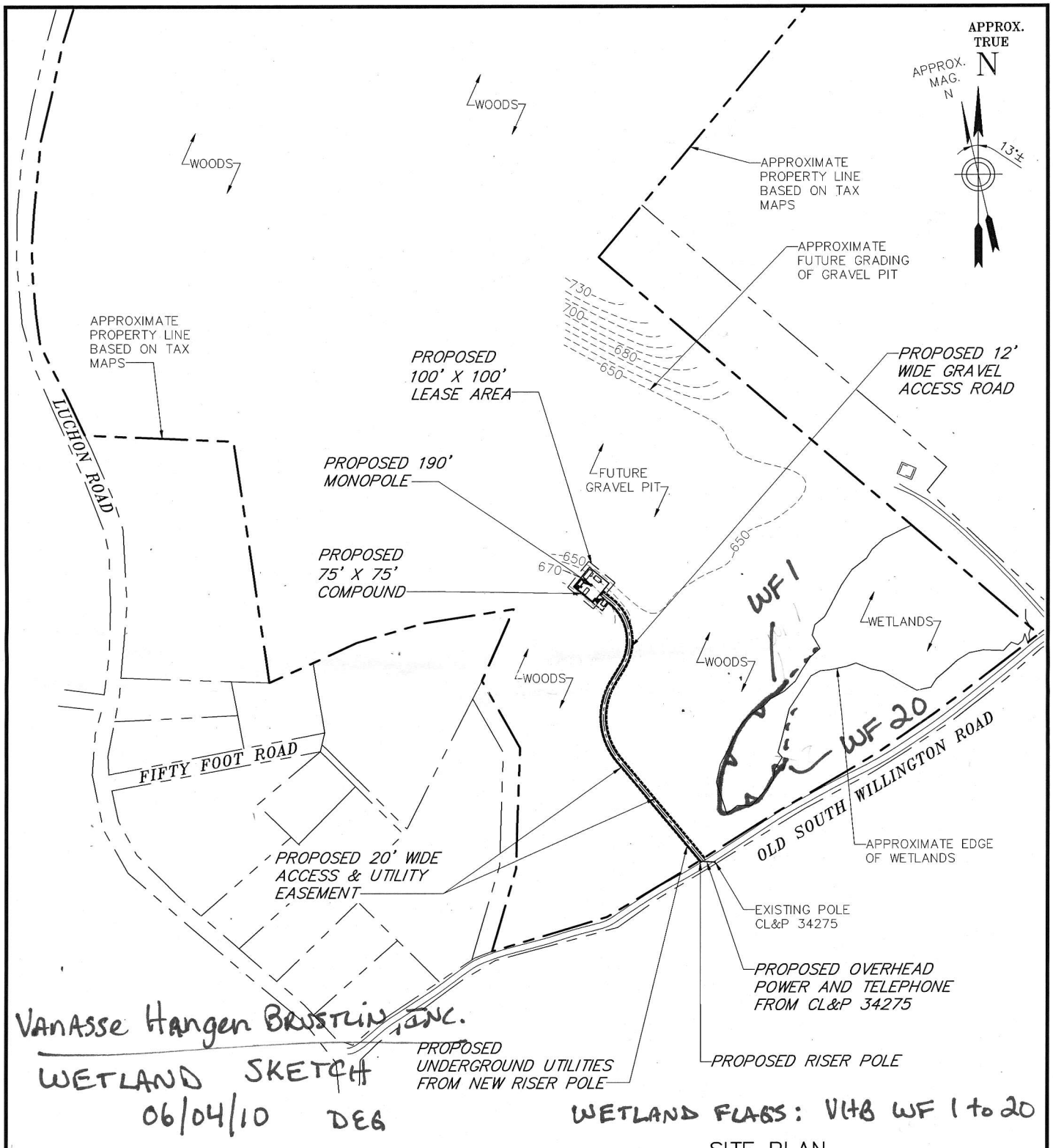
Charlton-Chatfield Complex, 15 To 45 Percent Slopes, Very Rocky This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Charlton soils, 30 percent Chatfield soils. 25 percent minor components. Charlton soils This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 15 to 45 percent and the runoff class is high. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 4 inches; fine sandy loam 4 to 7 inches; fine sandy loam 7 to 19 inches; fine sandy loam 19 to 27 inches; gravelly fine sandy loam 27 to 65 inches; gravelly fine sandy loam Chatfield soils This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from gneiss, granite, and schist. The slope ranges from 15 to 45 percent and the runoff class is high. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 3.3 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s Typical Profile: 0 to 1 inches; highly decomposed plant material 1 to 6 inches; gravelly fine sandy loam 6 to 15 inches; gravelly fine sandy loam 15 to 29 inches; gravelly fine sandy loam 29 to 36 inches; unweathered bedrock

Map Unit: 75C—Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes

Hollis-Chatfield-Rock Outcrop Complex, 3 To 15 Percent Slopes This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 54 degrees F. (7 to 12 degrees C.) This map unit is 35 percent Hollis soils, 30 percent Chatfield soils, 15 percent Rock Outcrop. 20 percent minor components. Hollis soils This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is 10 to 20 inches to bedrock (lithic). The drainage class is somewhat excessively drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 1.8 inches (very low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 1 inches; highly decomposed plant material 1 to 6 inches; gravelly fine sandy loam 6 to 9 inches; channery fine sandy loam 9 to 15 inches; gravelly fine sandy loam 15 to 25 inches; unweathered bedrock Chatfield soils This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from gneiss, granite, and schist. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 3.3 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s Typical Profile: 0 to 1 inches; highly decomposed plant material 1 to 6 inches; gravelly fine sandy loam 6 to 15 inches; gravelly fine sandy loam 15 to 29 inches; gravelly fine sandy loam 29 to 36 inches; unweathered bedrock Rock Outcrop This component occurs on bedrock controlled landforms. The slope ranges from 3 to 15 percent and the runoff class is very high. The Nonirrigated Land Capability Class is 8

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 7, Dec 3, 2009



VANASSE HANGEN BRUSTLIN, INC.

WETLAND SKETCH

06/04/10 DEG

WETLAND FLAGS: VHB WF 1 to 20

SITE PLAN

400 0 200 400

IN FEET

NOTE:
PROPOSED AT&T INSTALLATION SHOWN IS ONLY APPROXIMATE. EXACT LOCATIONS AND DETAILS WILL BE DETERMINED BY FINAL ENGINEERING DESIGN.

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CHA
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at&t
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SR1107
WILLINGTON B
OLD SOUTH WILLINGTON ROAD
WILLINGTON, CT 06279
TOLLAND COUNTY
CHA PROJ. NO. – 18301–1059

DATE: 5/18/2010 7:58 AM FILE: W:\SAI CINGULAR\18301\SITES\1059 WILLINGTON B 1107\LE\WILLINGTON_LE.DWG

ATTACHMENT 4(D)

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Wildlife Division
79 Elm Street, Sixth Floor
Hartford, CT 06106
Natural Diversity Data Base

RECEIVED
JUN 17 2010
VANASSE HANGEN BRUSTLIN, INC.

June 15, 2010

Ms. Coreen Kelsey
Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457

Re: Proposed AT&T Cell Tower (SR1107-Willington B) on Old South Willington Rd., Willington, CT

Dear Ms. Kelsey:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed AT&T cell tower (SR1107-Willington B) on Old South Willington Rd., Willington, CT. According to our information, there are no extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur on this property.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Environmental Protection's Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

Dawn M. McKay
Biologist/Environmental Analyst
Cc: NDDB File # 17797

DMM/hpw

Natural Diversity Data Base Areas

WILLINGTON, CT

December 2010

State and Federal Listed Species & Significant Natural Communities

Town Boundary

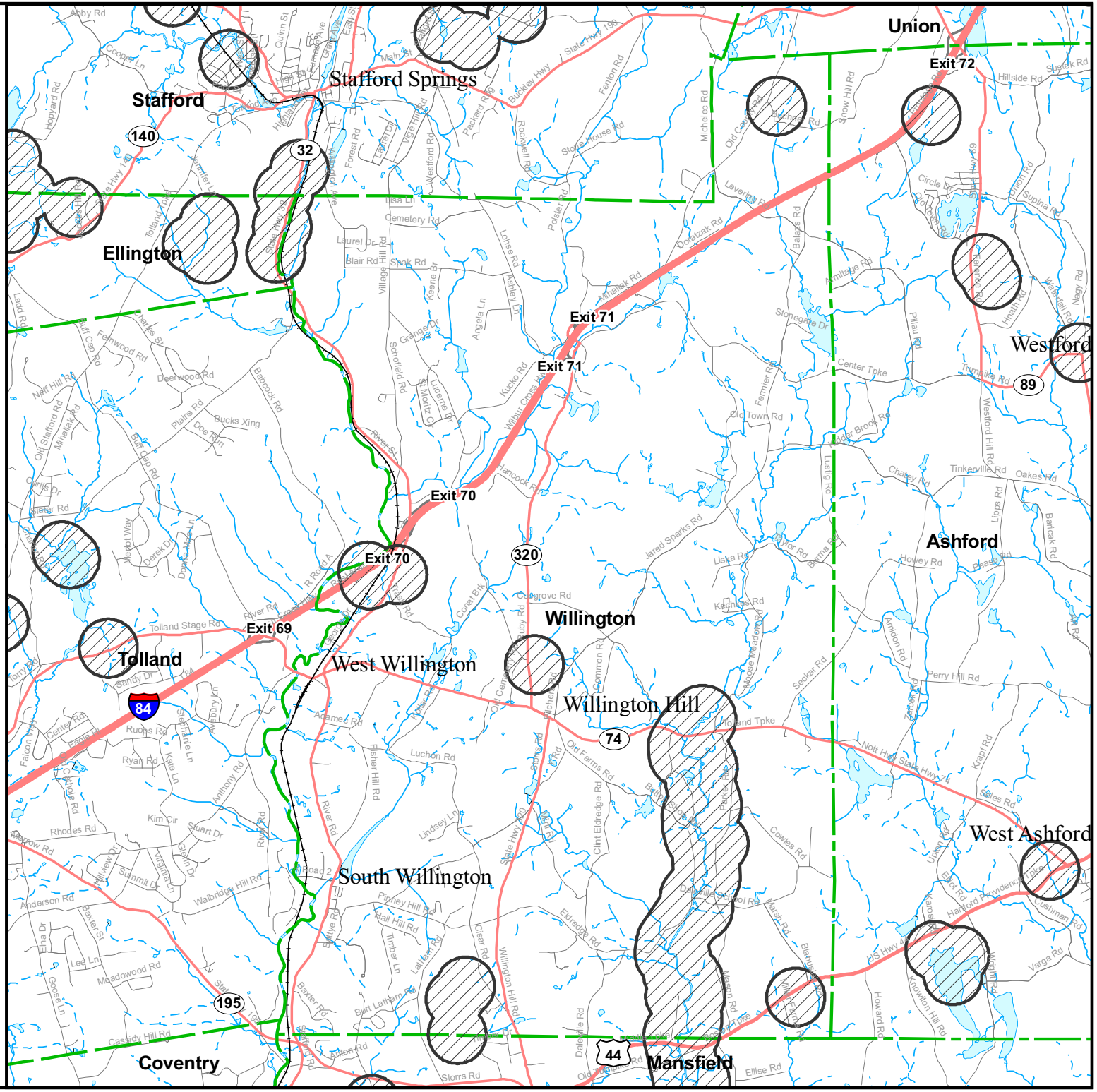
NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area; or overlapping a lake, pond or wetland that has shading; or upstream or downstream (by less than 1/2 mile) from a shaded area, the project may have a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on the DEP website.

To view street labels, use the PDF Layers tab on the left. Expand the Layers and use the "eye" icons to change visibility.

QUESTIONS: DEP, Bureau of Natural Resources, Wildlife Division
Phone (860) 424-3011
www.ct.gov/dep/nddbrequest

STATE OF CONNECTICUT
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127



ATTACHMENT 4(E)

rec'd 7/11/10

Transportation
Land Development
Environmental
Services

VHB imagination | innovation | energy Creating results for our clients and benefits for our communities

SKW

Vanasse Hangen Brustlin, Inc.

July 9, 2010

Ref: 41502.10

Mr. Daniel Forrest
Commission on Culture & Tourism
State Historic Preservation Office
One Constitution Plaza, Second Floor
Hartford, CT 06103

NO EFFECT
Daniel Forrest DEPUTY SHPO
STATE HISTORIC PRESERVATION OFFICE
Date 7·20·10 Project

Re: Proposed AT&T Wireless Telecommunications Facility
SR-1107 – Willington B
Old South Willington Road
Willington, Connecticut

Dear Mr. Forrest:

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by SAI Communications representing AT&T Mobility (AT&T) to review environmental resource information outlined in 47 CFR Ch.1 § 1.1307 sections (a) and (b) for environmental consequences pursuant to the Federal Communications Commission ("FCC or Commission") requirements. VHB determines the presence of resources listed under the National Environmental Policy Act (NEPA) on or near sites where AT&T proposes to locate a facility. Results of this screening process for the above referenced proposed facility in Willington are depicted on the enclosed Cultural Resources Screen map.

AT&T is proposing to construct a new wireless telecommunications facility on portions of property located off of Old South Willington Road in Willington, Connecticut. The facility, consisting of a ±190-foot tall monopole, antennas, and associated ground equipment, will be installed within a 75' x 75' fenced enclosed compound within a 100' x 100' lease area. The proposed 20' wide access/utilities easement will initiate off of Old South Willington Road and then continue along a proposed 12' wide gravel access drive in a northwesterly direction towards the proposed compound lease area. AT&T antennas will be attached to the monopole at a centerline height of 187 feet above ground level and associated ground equipment will be installed at its base. The monopole and compound area will be developed for use by future wireless service providers. See attached Site Plans for details.

The Cultural Resources Screen did not reveal the existence of any historic resources listed or eligible for listing on the National Register of Historic Places or Indian religious sites at or within a 0.5-mile radius (the area of potential effects; APE) of the project area. As a result, it is VHB's opinion that no visual or direct effects exist within the APE.

A *Preliminary Archaeological Assessment* prepared by Heritage Consultants, LLC dated July 7, 2010 was completed for the proposed project area. Heritage Consultants, LLC concluded that "In conclusion, although the project area has been only minimally impacted by historic and modern occupation and landuse, its natural characteristics suggest that it is unlikely that significant intact cultural deposits exist within the Area of Potential Effect associated with the proposed cellular communications tower. As a result, it is the professional opinion of Heritage Consultants, LLC that additional archeological investigation of the proposed project are not warranted." A copy of this Assessment is attached for your review.

RECEIVED
SEP 13 2010
VANASSE HANGEN BRUSTLIN, INC.

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Middletown, Connecticut 06457-1847
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