

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:

APPLICATION OF NEW CINGULAR
WIRELESS PCS, LLC FOR A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY
AND PUBLIC NEED FOR THE
CONSTRUCTION, MAINTENANCE AND
OPERATION OF A TELECOMMUNICATIONS
FACILITY AT 95 BALANCE ROCK ROAD,
HARTLAND, CONNECTICUT

DOCKET NO. 408

May 9, 2011

RESPONSES TO SITING COUNCIL'S REQUEST FOR ADDITIONAL INFORMATION

Q1. Are there any blue-blazed trails on the west side of the reservoir (excluding Falls Brook Trail)? If so, are there any prominent overlooks? (Tr. pp. 14-14)

A1. Excluding the Falls Brook Trail, there are no blue blaze trails located on the west side of the Barkhamsted Reservoir. The Falls Brook Trail vista provides views looking down to a small stream located in a heavily wooded area. Much of the land on the west side of the reservoir is owned by the MDC and is not publically-accessible, although there appears to be numerous woods roads and paved roads in this area (presumably for MDC use). VHB is not aware of any prominent overlooks in this area.

Q2. What is the elevation of Pine Mountain south of the site? How far is it from the site? Would the tower be visible from the Pine Mountain overlook? (Tr. pp. 42-43) Would the tower be visible from the "Indian Caves" on the Tunxis Trail south of Pine Mountain?

A2. Pine Mountain rises to a ground elevation of approximately 1,391 feet AMSL and is located roughly 2.85 miles to the southwest of proposed Site B. Pine Mountain is located outside of VHB's two-mile radius study area and was therefore not included as part of the Visual Resource Evaluation Report prepared in December, 2010. Pine Mountain was hiked by VHB staff as part of another Application (Docket No. 387) and based on that particular reconnaissance, we cannot preclude the possibility of limited visibility associated with the proposed monopole. However, given the existing vegetation at the summit of Pine Mountain and the distance from the proposed facility (nearly three miles), it is VHB's opinion that such views would be minimal and would not be considered a substantial visual intrusion.

Situated along the Tunxis Trail approximately 4.30 miles to the southwest of the proposed facility, the Indian Council Caves are located at a ground elevation of roughly 1,150 feet AMSL. Taking into account the distance from the proposed facility; the intervening topography and vegetation, no views of the proposed facility are anticipated from this location.

Q3. What entity maintains the CCC ski cabin? Does it service a downhill ski trail or cross-country ski trail? (Tr. pp. 84-85)

A3. VHB has confirmed that the Tunxis State Forest Ski Cabin was built by the Civilian Conservation Corp in 1937. The cabin includes a working fireplace, a wooden table and four wooden chairs. Based on a recent visit to the cabin, the structure is currently in excellent condition. According to the DEP State Parks Division, they maintain the ski cabin for public general recreational use.

Q4. Is there a commercial cross country ski area located on Route 179 in Hartland or Barkhamsted?

A4. The Pine Mountain Ski Touring Area is located off Route 179 in East Hartland, approximately 1.75 miles to the southeast of the proposed facility. However, it closed in January 2005. Pine Mountain Ski Touring formerly offered 9 miles of groomed trails for cross-country skiing.

Q5. Does the DEP or DOT control the salt garage area off Route 20? If it is DOT, property is there enough room for a tower? Was the DOT contacted about a potential tower lease? (Tr. pp. 39-40)

A5. Ann Marie Maynard of the DOT Appraisal Division confirmed that the DOT owns/controls a small portion of property where its DOT salt shed is located on Route 20 in Hartland. She indicated that there is insufficient space on the DOT property to host a tower facility and this was confirmed at the site by David Vivian. Attachment 1 contains a letter sent via email on April 28, 2011 from Ann Marie Maynard to David Vivian confirming that the DOT property is not a feasible tower site location.

Also, as demonstrated in AT&T's Responses to Siting Council Interrogatories, Set I (AT&T's Exhibit 3), a tower facility at this location would not provide adequate service. (See AT&T's Exhibit 3, Response No. 9).

Q6. What are the specific secondary roads in the coverage area that are open to public vehicles? (Tr. pp. 34-35)

A6. The table below includes the secondary roads within the coverage area and the distance in mileage of proposed coverage for each road listed.

Secondary Roads – Incremental Coverage	Mileage
Crest Ln	1.12
Hartland Hollow Rd	0.95
Milo Coe Rd	0.66
Millstone Rd	0.55
Walnut Hill Rd	0.46
Balance Rock Rd	0.41
Old Town Rd	0.37

Westwoods Rd	0.34
Pell Rd	0.32
Hall Rd	0.22
West St	0.19
W Hartland Rd	0.17
Anderson Rd	0.16
Hurricane Brook Rd	0.16
Skaret Rd	0.14
Emmons Rd	0.11
Pine St	0.11
Nielsen Rd	0.06
Hartland Rd	0.06
Wilderness Rd	0.04
Sycamore Ct	0.02

Q7. Would the tower be visible from the Saville Dam or the Beech Rock overlook northwest of the dam? (Tr. p. 82)

A7. The Saville Dam is located approximately 7 miles to the southwest of the proposed facility and sits at a ground elevation of approximately 532 feet AMSL. Potential views of the proposed monopole are not possible from this location due to the combination of distance (from the proposed facility) and intervening topography, particularly east of the Barkhamsted Reservoir where ground elevations range from approximately 800 feet AMSL to over 1,150 feet AMSL.

The Beach Rock Overlook area is located Approximately 6.7 miles to the southwest of the proposed facility at a ground elevation of approximately 665 feet AMSL. Given the distance from the proposed facility, nearly 7 miles, as well as the intervening topography (including nearby elevations that rise to over 1,100 feet AMSL), VHB does not anticipate views from this location.

Q8. Is Camp Alice Merritt a viable cell tower site for the proposed service area? (Tr. p. 90)

A8. No. Camp Alice Merritt is located too far south to be considered a viable cell tower site for the proposed service area. Included in Attachment 2 is a propagation map which clearly demonstrates that a 190' tall tower at the Camp Alice Merritt location would not provide coverage to the area where service is needed.

Q9. Is "Site C" a viable alternative for the proposed cell tower? If so, please provide a schematic of the site location including access, and a coverage plot indicating what height would be needed to provide the same coverage characteristics as Site A. (Tr. p. 140-142)

A9. Yes, Site C is a viable alternative for the proposed tower facility. Included in Attachment 3 are drawings depicting the proposed Site C facility.

At Site C, a height of 190' AGL is needed to provide the same coverage as Site A due to the terrain in the area. Included in Attachment 4 is a propagation map of Site C at 190' AGL. Attachment 5 contains terrain profiles for Site A at 190' and Site C at 190' which illustrate the terrain obstruction that must be overcome for reliable service and demonstrate the need for 190' at Site C.

Included in Attachment 6 is a comparative visual resource analysis that provides an assessment of the visibility of the tower at proposed Site C at a height of 190' AGL and at proposed Site B at 160' AGL.

Q10. Would the Verizon tower at 241 West Granville Road in Tolland MA provide coverage to Route 20 in the proposed service area? If so how would locating on this tower affect the proposed site? (Tr. p. 186)

A10. Due to its location over five miles from the proposed sites, AT&T cannot use the existing tower on West Granville Road (Route 57) in Tolland, Massachusetts to provide service to the area.

Q11. Is there any information as to what height above the ground the Saw-whet Owl migrates?

A11. Please see Dr. Lisa Standley's memorandum included in Attachment 7 regarding the saw-whet owls.

Dr. Standley's memorandum also addresses the relative importance of communications towers to bird mortality. As demonstrated therein, based on the available scientific research, communication towers ranging in height from 825' to 1,010' account for only 0.5% of the total avian mortality due to human activities.

Finally, Dr. Standley's memorandum supplements her testimony regarding the altitude of bird migrations.

Q12. Would the proposed tower have an affect on the "Balance Rocks"? (Tr. p. 224)

A12. No impacts to the "Balance Rocks" are anticipated.

Q13. Could the access drive to Site B include a curvature to prevent a direct view of the compound /tower from Balance Rock Road? If so, provide a schematic.

A13. Yes. It should be noted that the access drive for proposed Site B currently contains a curve which would prevent a direct view of the tower. In addition, a considerable amount of vegetation will remain at the end of the straight road section to provide a substantial visual buffer between the tower and the straight section of the road. An additional access drive curve can be incorporated as shown in the drawing included in Attachment 8.

SUPPLEMENTAL INFORMATION

AT&T hereby submits the following supplemental information:

- I. The proposed equipment shelter will include a 65 watt motion sensor light above the door to the shelter. (Tr. p. 21)
- II. The elevation of the gravel pit location at the shoreline of the reservoir is approximately 550' AMSL. (Tr. p. 243)
- III. As demonstrated by Mr. Well's testimony and the record in this proceeding, a Distributed Antenna System (DAS) is not a viable alternative for providing needed service to this area of Hartland. DAS systems are commonly used to serve discrete, areas with large call volume that cannot be covered with traditional outdoor macro sites, such as stadiums, large office complexes, University campuses and transportation tunnels. The coverage needs in this area of Hartland encompass a broad more rural area and as such, cannot be addressed by a DAS system. (Tr. pp. 97-103).
- IV. Included in Attachment 9 is an updated Northern Saw-whet Owl Nest Survey Report conducted during the breeding season. This report confirms the results of the previous survey (AT&T's Exhibit 9) and concludes that no signs of the Northern Saw-whet Owl presence could be detected during breeding season. As previously indication, AT&T could implement the survey recommendation of seasonal restrictions on construction, if deemed necessary.

CERTIFICATE OF SERVICE

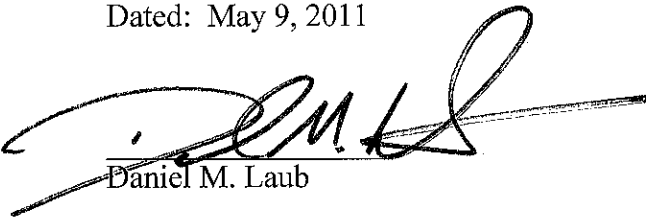
I hereby certify that on this day, a copy of the foregoing was submitted electronically and by overnight mail to the Connecticut Siting Council with copy to:

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Dated: May 9, 2011



Daniel M. Laub

cc: Michele Briggs, AT&T
David Vivian, SAI
Anthony Wells, C Squared
Scott Pollister, C Squared
Dan Goulet, C Squared
Dean Gustafson, VHB
Michael Libertine, VHB
Michael Koperwhats, VHB
Peter Perkins, CHA
Paul Lusitani, CHA
Christopher B. Fisher, Esq.

ATTACHMENT 1

Chiocchio, Lucia

From: David Vivian [David.Vivian@SAI-Comm.com]
Sent: Thursday, April 28, 2011 5:52 PM
To: Chiocchio, Lucia
Subject: FW: Cell tower site - Hartland, CT.
Attachments: Potential cell tower location.doc

Hi Lucia – attached please find Ann Maynard's letter regarding the DOT-controlled portion of the parcel identified as #8A on our Site Search Summary. As I mentioned on the phone, I visited the site again yesterday (4/28) during the balloon float for the alternate site(s) at the gun club.

The DOT does control the paved / fenced portion of this State Forest land – approx. ¼ acre, at best. Nearly 1/3 is improved with the salt shed and a small office shed. As such, the only possible location for a tower compound would be in the SE corner of the irregularly shaped compound (currently occupied by a large pile of gravel). I measured out 75' x 75' from that corner, and the compound would essentially block the entry to the facility – or greatly hinder truck mobility to the salt shed. I concur with Ms. Maynard's conclusion that a tower facility in this location is not feasible.

None of the remaining State Forest parcel is available, as before.

David Vivian
New Cingular Wireless PCS, LLC
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067
413-218-5042 (cell)

"I certify that this email and all attached documents do not contain Sensitive Personal Information as defined by AT&T company policy."

This e-mail and any files transmitted with it are SAI property, are confidential and are intended solely for the use of the individual or entity to whom this e-mail is addressed. If you are not one of the named recipient(s) or otherwise have reason to believe that you have received this message in error, please notify the sender and delete the message immediately from your computer. Any other uses, retention, dissemination, forwarding, editing, or copying of this e-mail is strictly prohibited.

From: Maynard, Ann Marie [<mailto:Ann.Maynard@ct.gov>]
Sent: Thursday, April 28, 2011 4:21 PM
To: David Vivian
Subject: Cell tower site - Hartland, CT.

David - Here is the e-mail regarding the Hartland cell tower site that you requested.

Potential cell tower location
DOT salt shed
Hartland, Connecticut

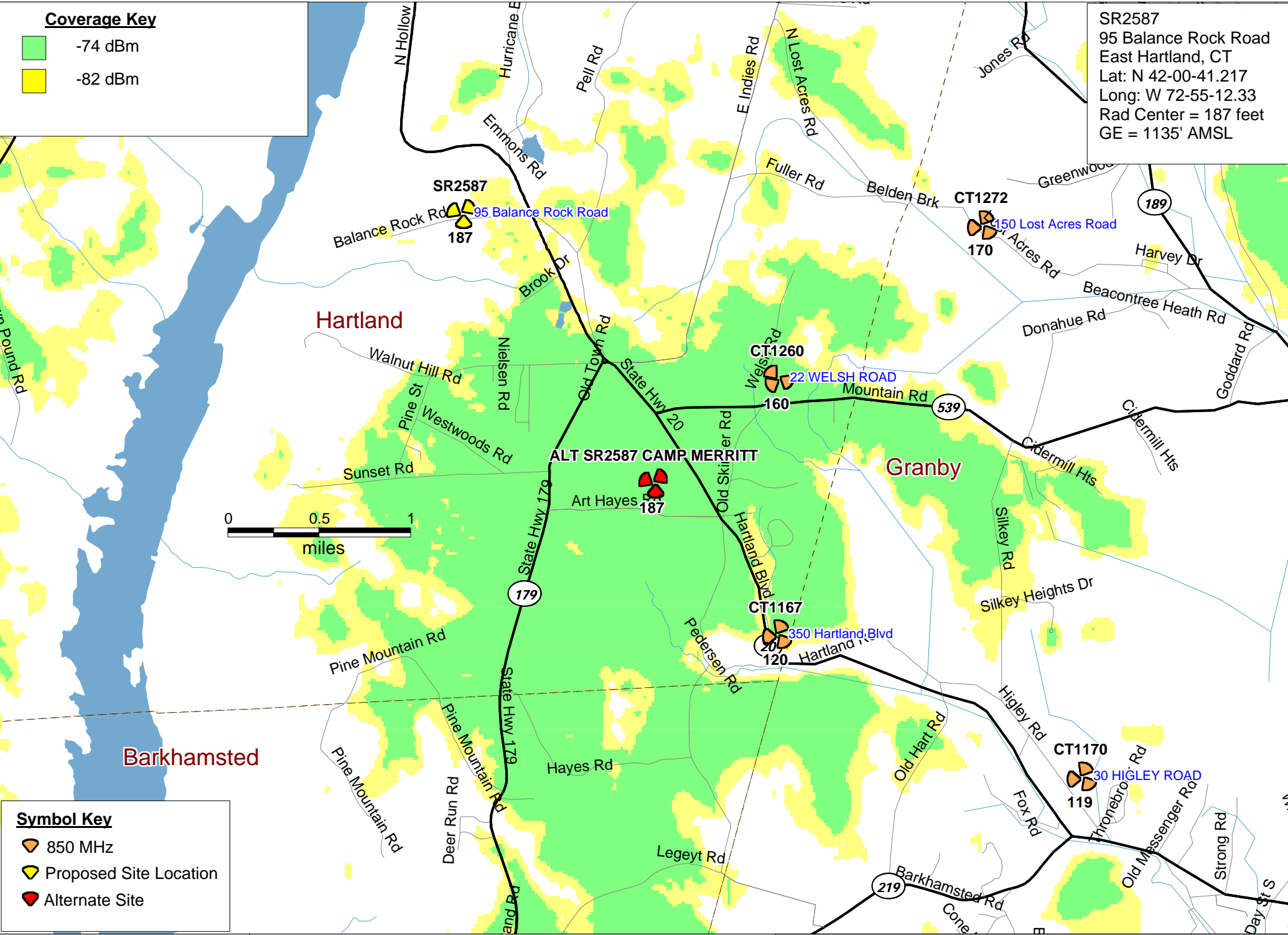
Per your request, I have investigated the possibility of erecting a cell tower on Department of Transportation property in Hartland. The property in question is a DOT operated salt shed. Please be clear that I have not sent this request through the official Departmental approval process. My findings are only preliminary. This site is a salt shed which is only used seasonally. It is a very small site. My conversations with our Maintenance Office determined that this site did not appear to be a viable cell tower site. As the site is small, the Department uses most of the area. During the winter DOT trucks, loaders, etc. are operated on the site. There does not appear to be room for an additional 100' x 100' foot square on this parcel. Due to liability, safety and security issues at this location it does not appear to be a viable site.

ATTACHMENT 2

Coverage Key

- 74 dBm
- 82 dBm

SR2587
 95 Balance Rock Road
 East Hartland, CT
 Lat: N 42-00-41.217
 Long: W 72-55-12.33
 Rad Center = 187 feet
 GE = 1135' AMSL



Symbol Key

- 850 MHz
- Proposed Site Location
- Alternate Site

Camp Alice Merritt

Hartland

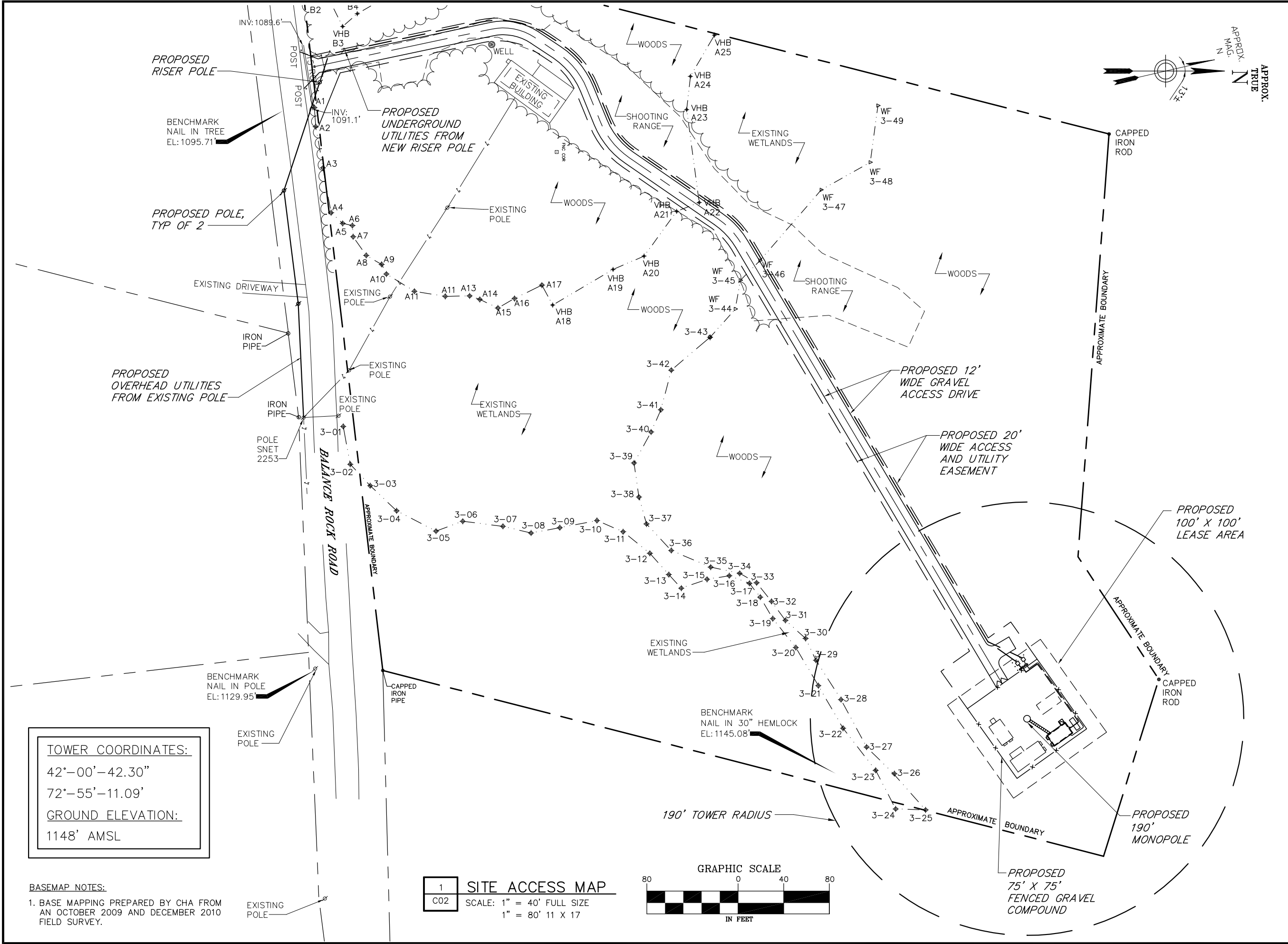
95 Balance Rock Rd, N. Lot
 East Hartland, CT



PREPARED ON
 DATE: 03/18/2011

REV 0

ATTACHMENT 3



at&t
 Your world. Delivered.

NEW CINGULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

Drawing Copyright © 2011

CHA

2139 Silas Deane Highway, Suite 212 - Rocky Hill, CT 06067-2336
 Main: (860) 257-4557 - www.chacompanies.com

CHA PROJECT NO:
 18301 - 1040 - 1101

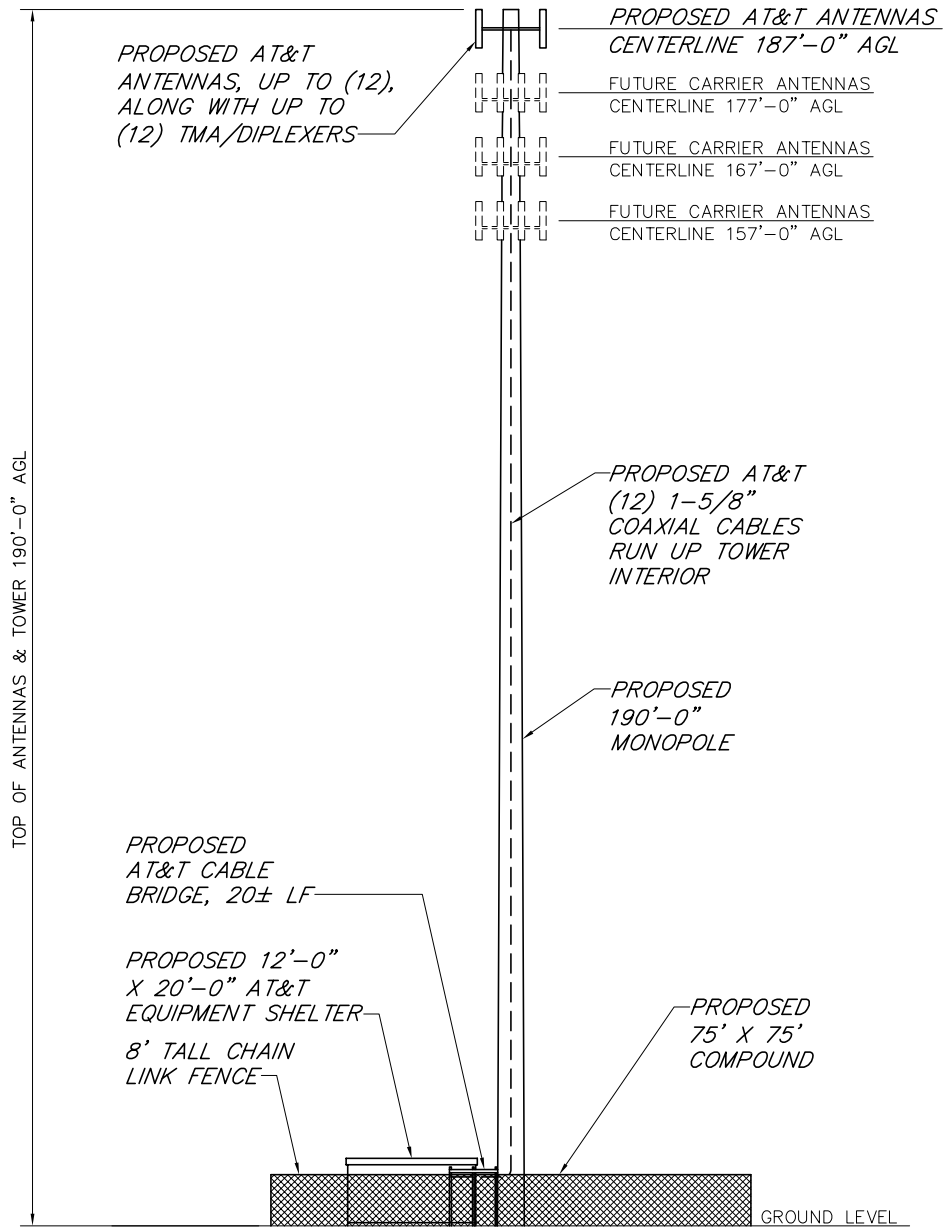
NO.	SUBMITTAL
0	11/25/09 ISSUED CSC CERTIFICATE BY: JDM CHK: PAL APP'D: RAB
1	08/30/10 REVISED PER COMMENTS BY: PAL CHK: PAL APP'D: PAL
2	01/06/11 NEW TOWER LOCATION BY: JDM CHK: PAL APP'D: PAL

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.

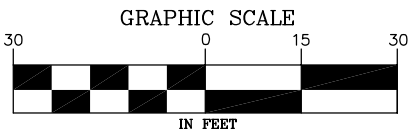
SITE ID:
 SR2587
SITE NAME:
 WEST HARTLAND
SITE ADDRESS:
 95 BALANCE ROCK ROAD
 EAST HARTLAND, CT
 06027
 HARTFORD COUNTY

SHEET TITLE
 SITE ACCESS MAP

SHEET NUMBER
 C02



1	SITE C TOWER ELEVATION
-	SCALE: 1" = 30'



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NEW CINGULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE, ROCKY HILL, CT 06067

SR2587
 WEST HARTLAND
 95 BALANCE ROCK ROAD
 EAST HARTLAND, CT 06027
 HARTFORD COUNTY

CHA PROJ. NO. - 18301-1040

SHEET TITLE:
 TOWER ELEVATION

DATE:
 05/02/11

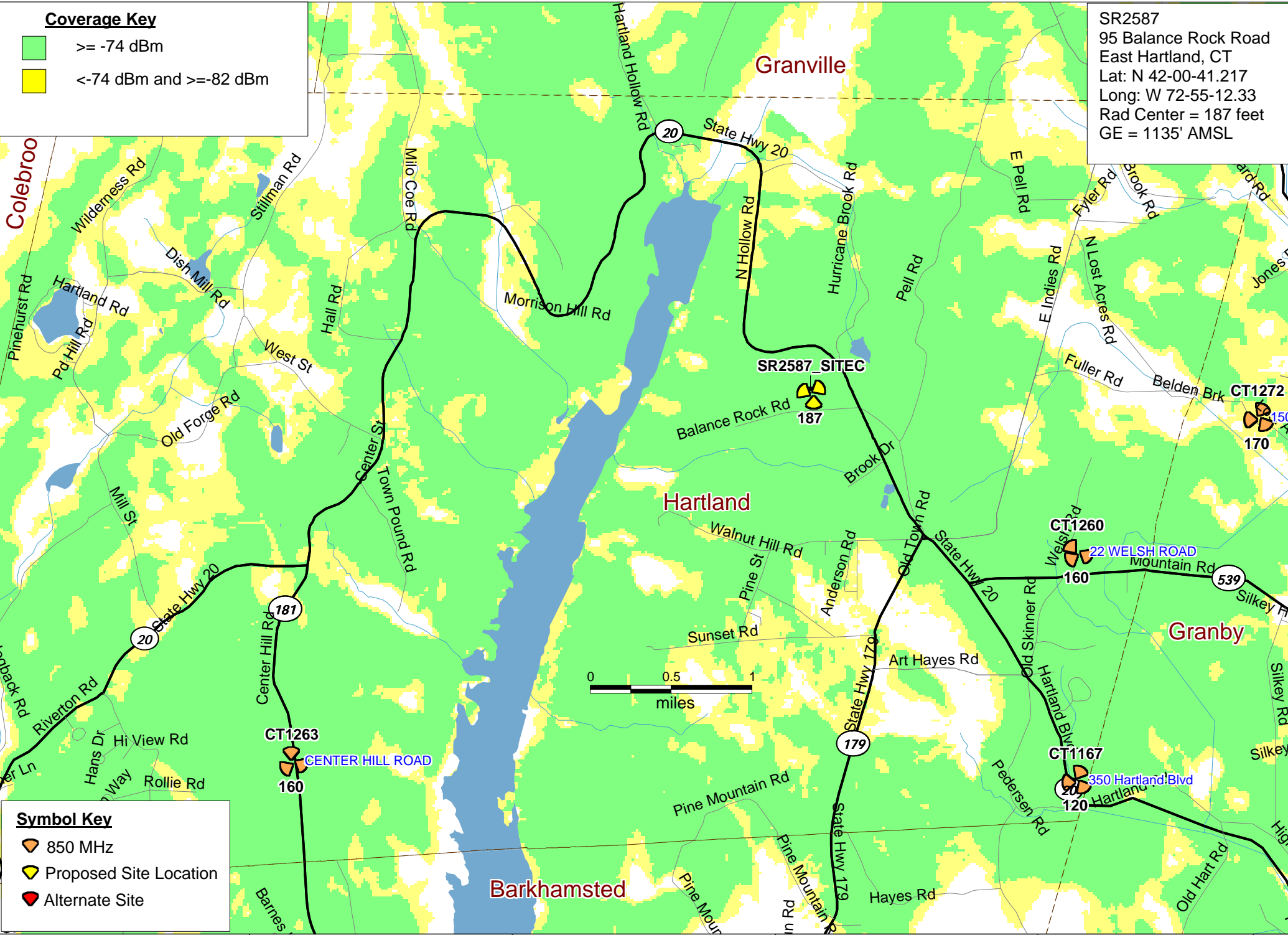
REVISION:
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ATTACHMENT 4

Coverage Key

- ≥ -74 dBm
- < -74 dBm and ≥ -82 dBm

SR2587
 95 Balance Rock Road
 East Hartland, CT
 Lat: N 42-00-41.217
 Long: W 72-55-12.33
 Rad Center = 187 feet
 GE = 1135' AMSL



Symbol Key

- 850 MHz
- Proposed Site Location
- Alternate Site

Existing and Site C
 Coverage @ 190'

Hartland

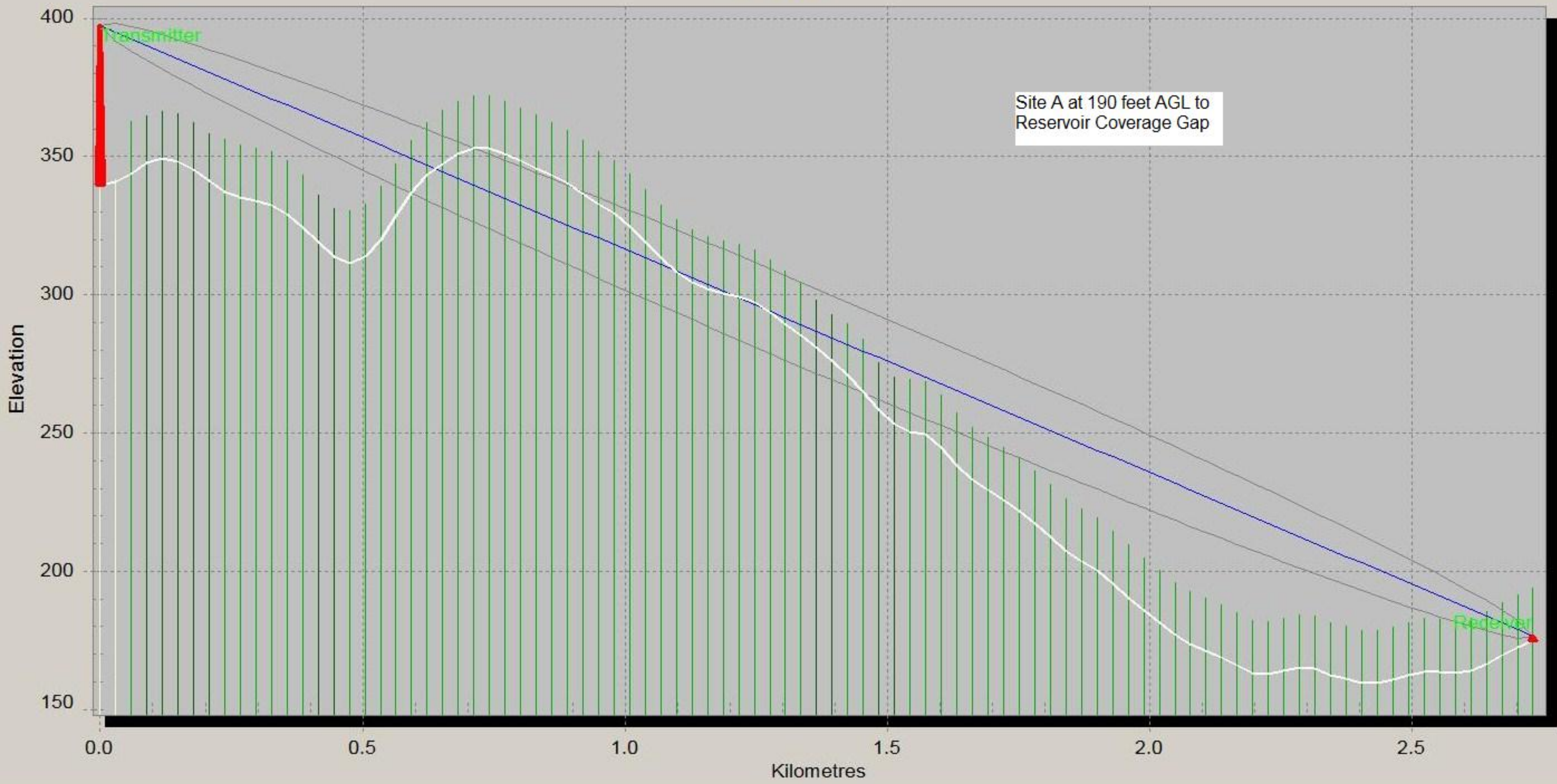
95 Balance Rock Rd, N. Lot
 East Hartland, CT



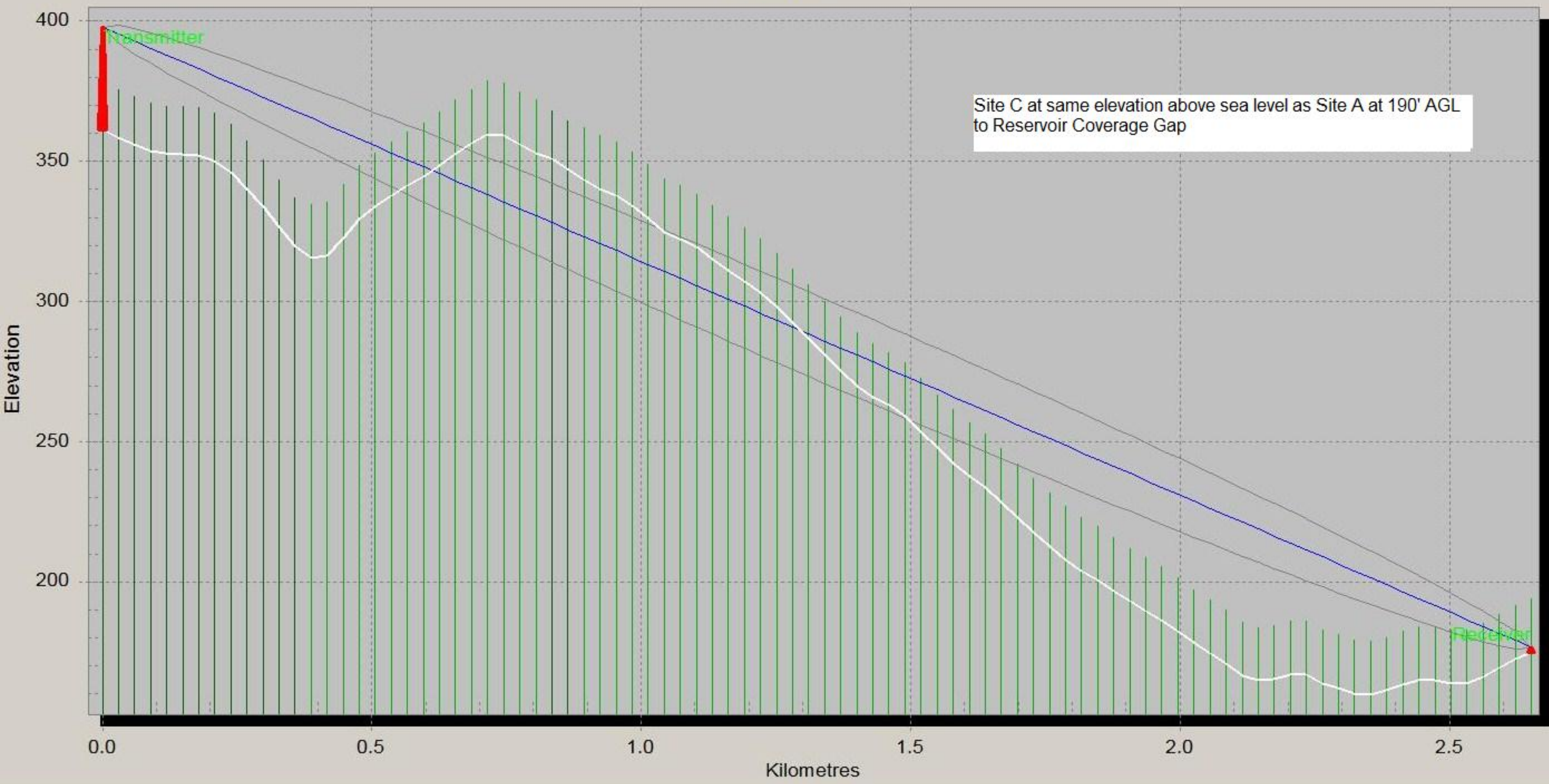
PREPARED ON	REV 0
DATE: 05/02/2011	

ATTACHMENT 5

Profile



Profile



ATTACHMENT 6



Memorandum

To: Lucia Chiochio, Esq.
CUDDY &
FEDER LLP
ATTORNEYS AT LAW
445 Hamilton Avenue, 14th Floor
White Plains, New York 10601

Date: May 9, 2011

Project No.: 41502.25

From: Vanasse Hangen Brustlin, Inc.

Re: Docket No. 408
Proposed New Cingular
Wireless PCS, LLC
Wireless Telecommunications Facility
Supplemental Comparative Visual
Evaluation
Site B At 160' and Site C At 190'
95 Balance Rock Road
Hartland, Connecticut

New Cingular Wireless PCS, LLC ("AT&T"), currently has an application pending before the Connecticut Siting Council ("Council") for a Certificate of Environmental Compatibility and Public Need (Docket No. 408) for the construction of a wireless telecommunications facility ("Facility") to be located on property at 95 Balance Rock Road in the Town of Hartland, Connecticut (identified herein as the "host property"). Initially, Vanasse Hangen Brustlin, Inc. conducted an evaluation of the potential viewshed associated with the installation of a 190-foot tall monopole to be located at one of two candidate sites on the host property, referred to throughout the hearing process as Site A and Site B. Site A is located approximately 200 feet north of Balance Rock Road and Site B is located roughly 495 feet northeast of Site A (approximately 500 feet north of Balance Rock Road). At the request of the Council, AT&T is currently evaluating a third candidate site, identified as Site C, which is located approximately 150 feet to the northeast of Site B. Development of Site C would require a 190-foot tall monopole. AT&T is also in the process of evaluating a reduced tower height for Site B from 190 feet above ground level ("AGL") down to 160 feet AGL. As such, VHB has conducted this supplemental comparative visual analysis for Site B at the reduced height of 160 feet AGL and Site C at 190 feet AGL. The methodologies utilized to conduct this analysis and the findings thereof are summarized in this memo.

In order to represent the visibility associated with the two candidate site locations, VHB used a two-fold approach incorporating both a predictive computer model and in-field analysis.

The predictive model is employed to assess potential visibility throughout the entire "Study Area" (defined herein as a two-mile radius surrounding the proposed site locations), including private property and/or otherwise inaccessible areas for field verification. Project- and Study Area-specific data were incorporated into the computer model, including Facility heights, locations and ground elevations, underlying and surrounding topography and existing vegetation (the removal of vegetation associated with construction activities is also taken into account). Exhibit No. 7 of AT&T's application document provides a more detailed explanation of VHB's viewshed model.

On April 27, 2011 Vanasse Hangen Brustlin Inc., (VHB) conducted publicly-noticed balloon floats at both Site B and Site C to further evaluate the potential viewshed of the respective sites within the Study Area. The balloon floats consisted of raising and maintaining two red, four-foot diameter, helium-filled weather balloons (tethered on the same line) at 160 feet AGL at Site B and a single red, four-foot diameter, helium-filled weather balloon at a height of 190 feet at Site C. Once the balloons were secured, VHB staff conducted drive-by reconnaissance along the roads located within the Study Area 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 hiked portions of the Tunxis Trail (part of the Connecticut Blue Blaze Trail System) and a spur trail leading to the Tunxis State Forest Ski Cabin. During the balloon float, the temperature was approximately 50 degrees Fahrenheit with mostly overcast skies, moderate sustained winds and occasional wind gusts. The results of the analysis are depicted on the comparative viewshed map which is attached as part of this memo.

During the in-field reconnaissance, the balloons were photographed from a number of representative vantage points to document the actual view towards the proposed Facility. VHB field personnel were also given permission to enter four private properties located along Balance Rock Road (including #48, #64, #72 and #88) to evaluate visibility and obtain photographs. Locations where the balloon was not visible are also presented as part of this analysis. The locations of the photos are described in the table below:

View	Location	Orientation	Dist. To Site B	Dist. To Site C	Visibility
1	Front Yard of #48 Balance Rock Road	NW	± 0.19-Mile	± 0.19-Mile	Non-Visible
2	Rear Yard of #48 Balance Rock Road	NW	± 0.20-Mile	± 0.20-Mile	Non-Visible
3	Front Deck of #64 Balance Rock Road	NW	± 0.14-Mile	± 0.15-Mile	Non-Visible
4	Front steps of #72 Balance Rock Road	NE	± 0.13-Mile	± 0.14-Mile	Seasonal (B and C)
5	Rear yard of #72 Balance Rock Road (just north of tree line)	NE	± 0.15-Mile	± 0.16-Mile	Seasonal (B and C)
6	Front Yard of #88 Balance Rock Road	NE	± 0.20-Mile	± 0.22-Mile	Seasonal (B and C)
7	Tunxis Ski Cabin	NE	± 0.51-Mile	± 0.53-Mile	Non-Visible
8	Tunxis Trail (CT Blue Blaze)	NE	± 0.20-Mile	± 0.22-Mile	Non-Visible
9	Tunxis Trail (CT Blue Blaze)	NE	± 0.16-Mile	± 0.17-Mile	Non-Visible
10	End of Balance Rock Road	NE	± 0.18-Mile	± 0.19-Mile	Seasonal (B and C)
11	Route 20	NE	± 1.47-Mile	± 1.47-Mile	Year-Round

Photographs of the balloon(s) from the view points listed above were taken with a Nikon D-3000 digital camera body and Nikon 18 to 135 mm zoom lens. Where feasible, the lens was typically 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." Several photographs were taken utilizing a 24mm lens setting in order to capture a greater field of view. The focal lengths for these images are identified on the attached photographs.

Representative photographic simulations were generated for select locations where one or both of the balloons were 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.

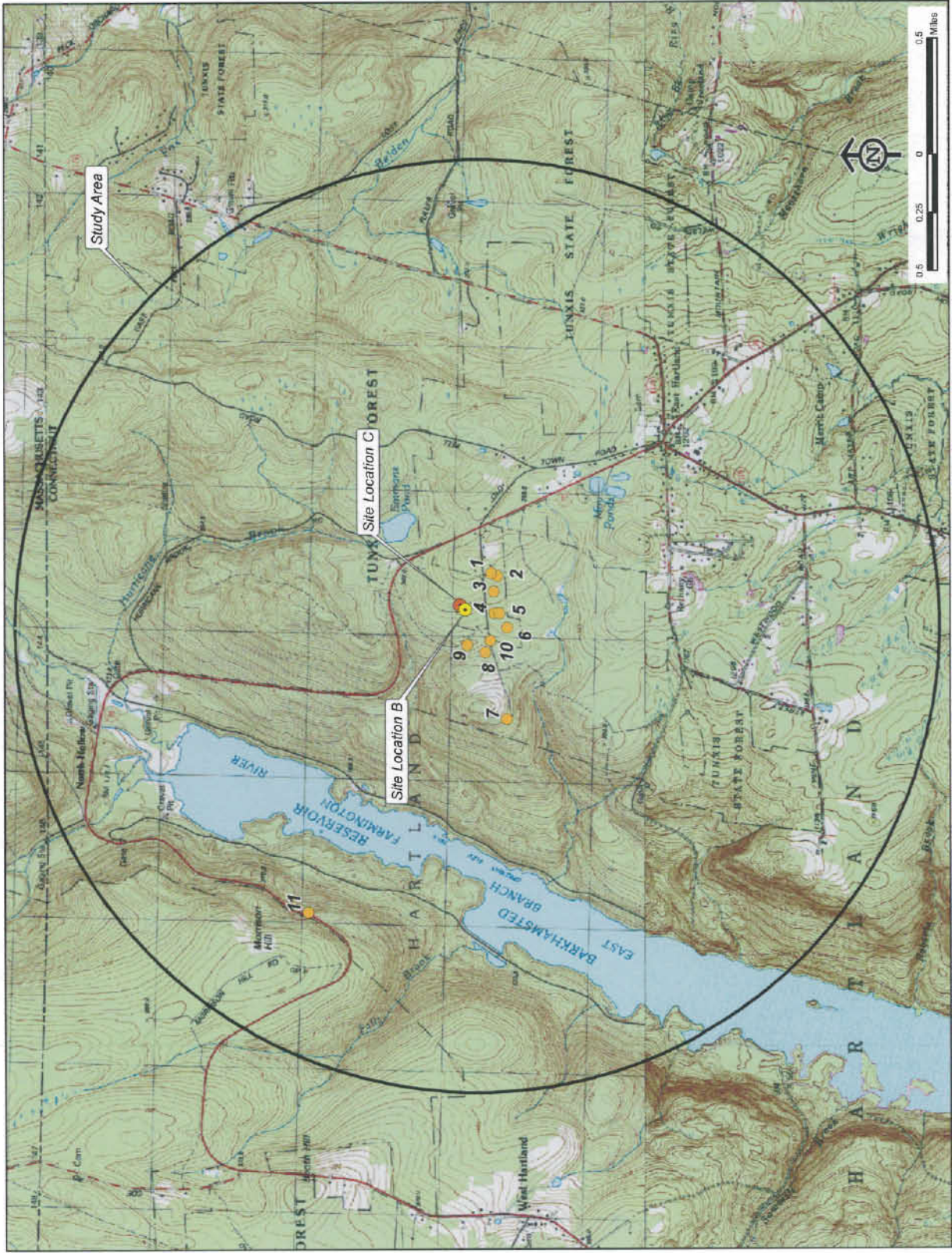
Based on this analysis, areas from where a 160-foot tall monopole at Site B and a 190-foot tall monopole at Site C would be visible above the tree canopy comprise approximately 1 acre and approximately 3 acres, respectively, within the 8,042-acre Study Area. As depicted on the attached viewshed maps, a significant portion of anticipated year-round visibility associated with either site location would occur on a cleared area of the host property that is currently used as a shooting range. The map also depicts a small area of potential year-round visibility associated with Site C over open water on the west side of the Barkhamsted Reservoir. A brief view of either location would also be achieved from an elevated portion of Route 20, west of the reservoir, approximately 1.5 mile away. No year-round views associated with either Site would extend to the abutting and/or adjacent residential properties located off Balance Rock Road. As evidenced by previous VHB field efforts and the recent reconnaissance conducted by VHB, potential year-round views of either location would be limited to the areas described above by a combination of the intervening topography and vegetation found within the Study Area. This is particularly true within the immediate vicinity of the host property where an abundance of mature evergreens would serve to provide significant visual screening, even during the winter months. The viewshed map, depicting visibility along Balance Rock Road and within the general Site vicinity, provides brief descriptions characterizing potential views, and/or lack thereof, from the four residential parcels located adjacent to the proposed Facility. The owners of these properties authorized VHB staff to conduct photographic documentation from their properties in advance of the April 27, 2011 balloon float.

¹ 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.

The viewshed map also depicts several additional areas where seasonal (i.e. during "leaf off" conditions) views are anticipated through the deciduous trees. Since Site B and Site C are located within close proximity to one another, potential seasonal views associated with either site are expected to be fairly similar, despite their 30-foot difference in height, and are therefore depicted as a single layer on the viewshed map. These areas comprise approximately 5 acres and are mainly confined to the host property. Limited seasonal views are also expected to extend to a small portion of the Balance Rock Road turnaround area located within the immediate vicinity of the host property; a small stretch of Route 20 located roughly 1.50-mile to the northwest of the two sites; and from select portions of two residential properties located directly south of the host property (#72 Balance Rock Road and #88 Balance Rock Road). No views are anticipated from the residences located within the general vicinity of the Balance Rock Road and Route 20 intersection.

PHOTOLOG MAP



middle1502_25gprhshf3101R341512_25_Photos.mxd

View 1

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT YARD OF #48 BALANCE ROCK ROAD (24mm focal length)		NORTHWEST	B	0.19 MILE +/-	NON-VISIBLE
			C	0.19 MILE +/-	NON-VISIBLE

condemnation photographs furnished to 1502 25 Program



View 2

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
REAR YARD OF #48 BALANCE ROCK ROAD (24mm focal length)		NORTHWEST	B	0.20 MILE +/-	NON-VISIBLE
			C	0.20 MILE +/-	NON-VISIBLE



PHOTOGRAPHIC DOCUMENTATION

View 3

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT DECK OF #64 BALANCE ROCK ROAD (24mm focal length)		NORTHWEST	B	0.14 MILE +/-	NON-VISIBLE
			C	0.15 MILE +/-	NON-VISIBLE

dmidda11502 29graphic913URB34 1502 26_Photos.m



View 4 Site B

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT STEPS OF #72 BALANCE ROCK ROAD (24mm focal length)		NORTHEAST	B	0.13 MILE +/-	SEASONAL
			C	SEE VIEW 4 SITE C	



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View 4 Site C

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT STEPS OF #72 BALANCE ROCK ROAD (24mm focal length)		NORTHEAST	B	SEE VIEW 4 SITE B	SEASONAL
			C	0.14 MILE +/-	



cmiddm1502 29\graphics\FIGURES\4 1502 25_Photo.m

View 5 Site B

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
REAR YARD OF #72 BALANCE ROCK ROAD (JUST NORTH OF TREE LINE)		NORTHEAST	B	0.15 MILE +/-	SEASONAL
			C	SEE VIEW 5 SITE C	



cmidatn1502 251gprncsrft3JRE9M1502 29_Photos.m

View 5 Site B

PHOTOGRAPHIC SIMULATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
REAR YARD OF #72 BALANCE ROCK ROAD (JUST NORTH OF TREE LINE)		NORTHEAST	B	0.15 MILE +/-	SEASONAL
			C	SEE VIEW 5 SITE C	

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View 5 Site C

PHOTOGRAPHIC DOCUMENTATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
REAR YARD OF #72 BALANCE ROCK ROAD (JUST NORTH OF TREE LINE)	NORTHEAST	B	SEE VIEW 5 SITE B	SEASONAL
		C	0.15 MILE +/-	SEASONAL

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View 5 Site C

PHOTOGRAPHIC SIMULATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
REAR YARD OF #72 BALANCE ROCK ROAD (JUST NORTH OF TREE LINE)	NORTHEAST	B	SEE VIEW 5 SITE B	SEE VIEW 5 SITE B
		C	0.15 MILE +/-	SEASONAL

cmiddafr1502251gphocaf70JURE34150225_Photosm



View 6 Site B

PHOTOGRAPHIC DOCUMENTATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT YARD OF #88 BALANCE ROCK ROAD (24mm focal length)	NORTHEAST	B	0.20 MILE +/-	SEASONAL
		C	SEE VIEW 6 SITE C	



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View 6 Site C

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT YARD OF #88 BALANCE ROCK ROAD		NORTHEAST	B	SEE VIEW 6 SITE B	SEASONAL
			C	0.22 MILE +/-	



cmhdaal-1502 25@pnhcspfrfgurebvm-1502 25_Photos.m

View 6 Site C

PHOTOGRAPHIC SIMULATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
FRONT YARD OF #88 BALANCE ROCK ROAD		NORTHEAST	B	SEE VIEW 6 SITE B	SEE VIEW 6 SITE B
			C	0.22 MILE +/-	SEASONAL



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View 7

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
TUNXIS SKI CABIN (24mm focal length)		NORTHEAST	B	0.51 MILE +/-	NON-VISIBLE
			C	0.53 MILE +/-	NON-VISIBLE

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View 8

PHOTOGRAPHIC DOCUMENTATION



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
TUNXIS TRAIL (CT BLUE BLAZE) (24mm focal length)		NORTHEAST	B	0.20 MILE +/-	NON-VISIBLE
			C	0.22 MILE +/-	NON-VISIBLE



LOCATION		ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
TUNXIS TRAIL (CT BLUE BLAZE) (24mm focal length)		NORTHEAST	B	0.16 MILE +/-	NON-VISIBLE
			C	0.17 MILE +/-	NON-VISIBLE

cmddamr1502_29\graphics\TUNXIS\1502_25_Problem

View 10

PHOTOGRAPHIC DOCUMENTATION



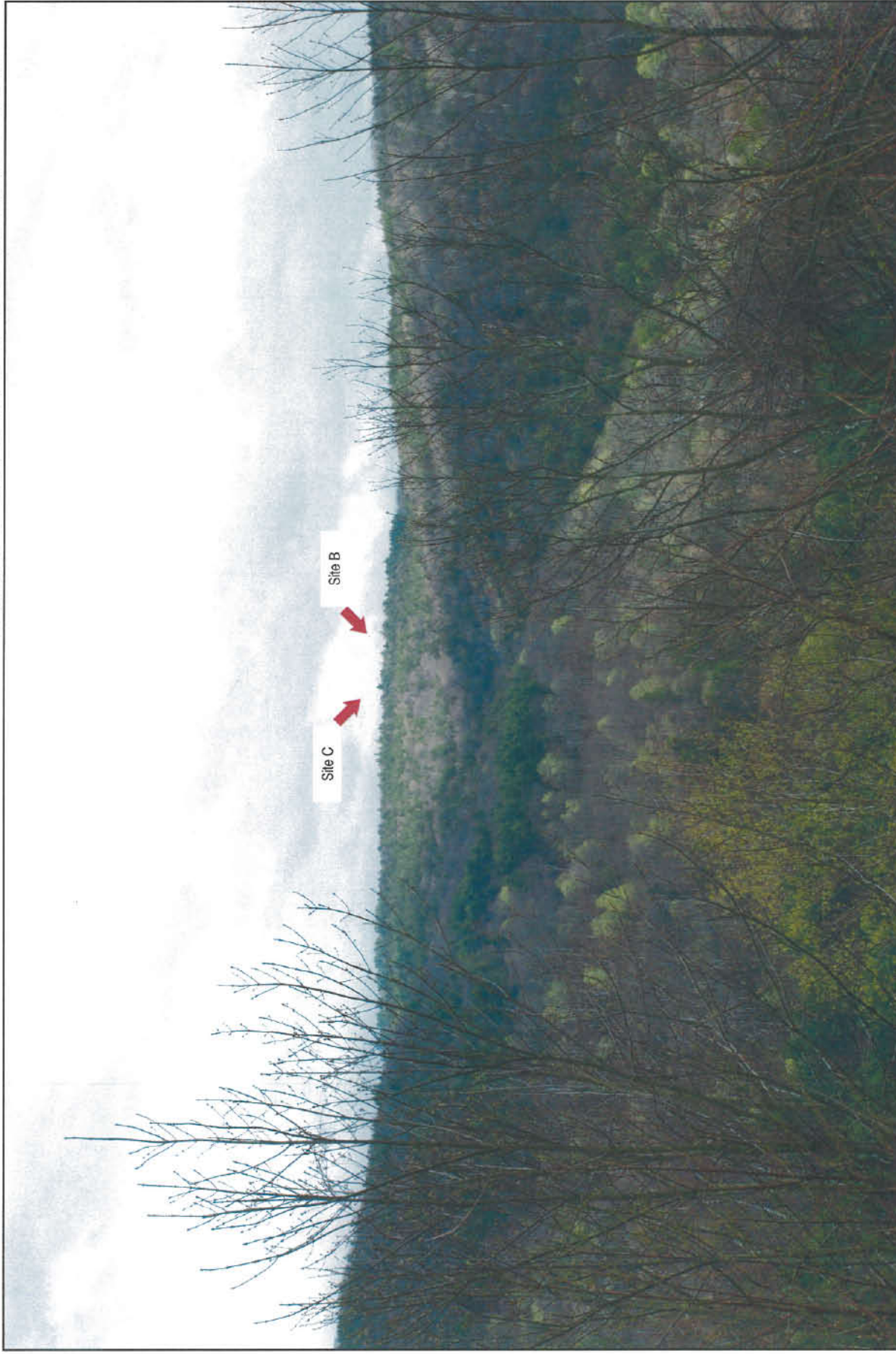
LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
END OF BALANCE ROCK ROAD	NORTHEAST	B	0.18 MILE +/-	SEASONAL
		C	0.19 MILE +/-	SEASONAL

cmidda1502 25\graphics\F3\JHE SA 1502 25_Program



View 11

PHOTOGRAPHIC DOCUMENTATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
ROUTE 20	NORTHEAST	B	1.47 MILES +/-	YEAR-ROUND
		C	1.47 MILES +/-	YEAR-ROUND

View 11 Site B

PHOTOGRAPHIC SIMULATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY	
ROUTE 20	NORTHEAST	B	1.47 MILES +/-	YEAR-ROUND	N/A
		C	N/A		

View 11 Site C

PHOTOGRAPHIC SIMULATION



LOCATION	ORIENTATION	SITE	DISTANCE TO SITE	VISIBILITY
ROUTE 20	NORTHEAST	B	N/A	N/A
		C	1.47 MILES +/-	YEAR-ROUND

ATTACHMENT 7



Vanasse Hangen Brustlin, Inc.

101 Walnut Street
P. O. Box 9151
Watertown, MA 02471-9151
617 924 1770
FAX 617 924 2286

Memorandum

To: Lucia Chiocchio, Esq.

Date: April 28, 2011

Project No.: 41502.25

From: Lisa A. Standley, Ph.D.

Re: CT Siting Council Docket 408

This memorandum provides additional information concerning the potential effects of the proposed cell tower at 95 Balance Rock Road, Hartland CT.

1) Effects of the proposed tower on migrating saw-whet owls.

At the March 1, 2011 hearing of the Connecticut Siting Council, the Council asked if there was any information as to what height above ground the saw-whet owl migrates.

I have researched this issue using available scientific reference materials. There is no information in the scientific literature on the height above ground that the saw-whet owl (or any other owl species) migrates. Migratory movements of saw-whet owls have been documented recently by several studies using capture-recapture data on banded owls, and satellite tracking studies, and have documented some of the geographic movements of this species but provide no data on altitudes.

This information would, in any event, provide little insight into the effects of the proposed tower on saw-whet owls, as they have been reported to be present on the 95 Balance Rock Road site in winter (within 50 feet of the ground), not migrating past the site above the tree canopy.

To supplement this investigation, I reviewed studies that have documented the effects of telecommunications towers on migratory birds to determine if saw-whet owls are killed by these towers. The extensive records of bird mortality provided by Kemper (1996) of a 38-year study at a 1,000-foot tower recorded 123 species, none of which were owls. Other studies of shorter duration (Ball et al., 1995; Cooley, 1977; Seets and Bohlen, 1977; Taylor and Anderson, 1973) of towers ranging from 550 to 1484 feet) also did not record any owl mortality.

2) Relative importance of communications towers to bird mortality

In an attempt to place the issue of communications tower mortality of migratory birds into context, I have done some research into the relative importance of communications towers. The best-documented study (Erickson et al., 2005) shows that communications towers ranging in height from 825 to 1,010 feet account for an annual mortality of approximately 4.5 million birds, which is 0.5 percent of the total avian mortality due to human activities. The largest contribution is buildings (550 million), power lines (130 million), and feral cats (100 million). Automobiles account for approximately 80 million bird deaths a year, 8.5 percent of the total.

3) Altitudes of Bird Migration

I have also done additional research on the altitude above ground level at which birds migrate. These studies have used radar, ceilometers, and visual observations from a light plane.

The Smithsonian Migratory Bird Center website provides a brief summary of the available data, noting that flight altitudes vary with wind conditions, time of day, features of the ground, and weather. Birds generally fly higher with tailwinds and lower with headwinds. In general nocturnal migrants fly at higher altitudes than diurnal migrants, and most birds fly higher over water than land. According to the Smithsonian, most songbirds migrate between 500 and 6,000 feet (75 percent are between 500 and 2,000 feet). Raptors (hawks and vultures) migrate between 700 and 4,000 feet.

Graber (1968), using radar, measured altitude of nocturnal fall migrants over Champaign, Ill. He found that migrants ranged from 1,500 to 3,500 ft elevation, with most in the 2,000-3,000 foot range. Gauthreaux (1972) used radar to track spring migrants in coastal Louisiana. He found that the altitude of daytime migration ranged from 800 ft to 13,298 ft, with most birds in the 1,600 to 10,000 ft range. Birds generally flew above the cloud layer, although when cumulus clouds were more than 7,000 ft high, birds flew lower. He suggested that birds prefer to fly in the more stable air above the cloud layer. On a day when the cloud cover extended to 10,000 ft, birds were recorded at 4,000-6,000 ft, between cloud layers. Nocturnal migrants were at lower altitudes, generally 3,000 ft less. Gauthreaux found that 70 percent of the nocturnal migrants were between 800 and 3,700 ft, and within this zone 75 percent were between 796 ft and 1,592 ft. Nocturnal migrants flew below the cloud layer generally. On one night when the overcast was at 1,000 ft, the migrants flew in and above the cloud layer. Able (1970) had results comparable to Nisbet (1961) and Gauthreaux 1968, but suggested that Graber and others had overestimated altitudes due to limitations of their study methods. Able found that nightly means ranged from 1,500 ft above ground level (agl) to 2,500 ft agl. All means were above 1,000 ft agl. He also found that altitudes were highest early in the night (75 percent were below 2,500 ft) and drop towards dawn (86 percent were below 2,500 ft). The maximum altitude recorded by Able was 11,000 ft. He suggested that most birds are within 1,250 ft of the ground, and that they fly below cloud level on overcast nights.

Bellrose (1971) tracked bird migration altitudes using radar and visual observations from a light aircraft. They found no evidence of birds migrating below 100 ft agl, and found that the concentration of migrants (in Illinois) was between 500 and 1,000 ft agl (50 percent of spring the spring migrants and 48 percent of the fall migrants), but birds were observed at 350 ft (their lowest flight transect) and up to more than 3,000 ft.. On one occasion, birds were observed at up to 6,000 ft agl, with more birds at 2,000 ft than 1,000 ft. Birds flew lower on overcast nights and with an unfavorable wind – generally more concentrated in the 500 to 2,500 ft level on overcast nights and at 500-1500 ft in unfavorable wind conditions. Bellrose also did a broader geographic exploration and compared ridges and valleys of the Appalachians near Chattanooga, TN where they found no birds over ridges, and an increased density over valleys.

More recent localized studies have been done for wind energy projects. Williams et al. (2001) at a mountain pass found that most birds were between 10 and 300 m (30 and 1,000 ft) agl (their equipment could not detect over 500 m agl). Radar studies confirmed that most birds were more than 300 m (1,000 ft) agl. Mabee et al. (2006) found that the mean flight altitude was 427-509 m agl (1,400 to 1,670 ft).

These studies confirm that bird migration (passerine birds) are generally at altitudes significantly above the proposed 190-foot monopole tower.

References Cited – Owl Migration

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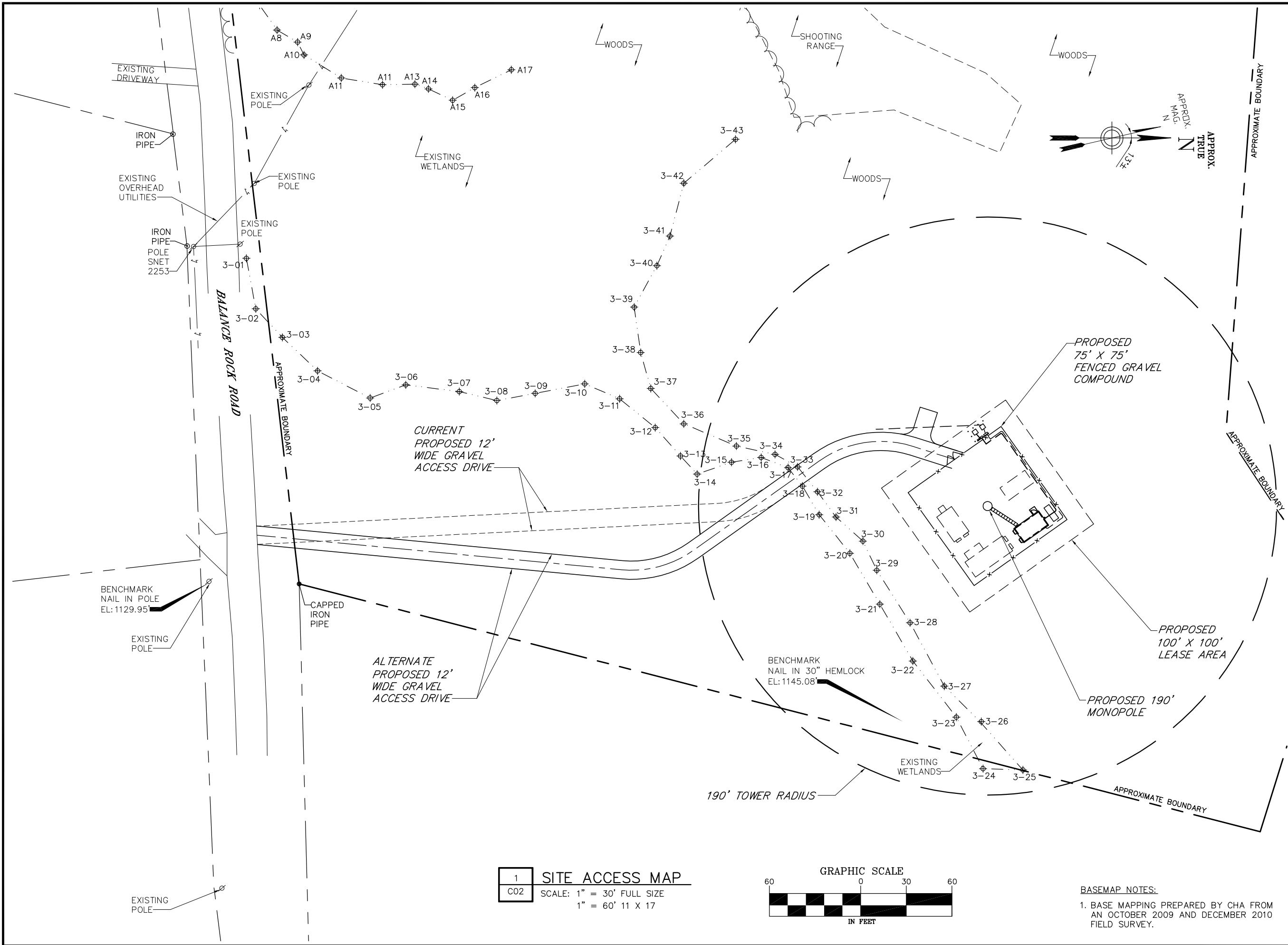
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References Cited – Altitude of Migration

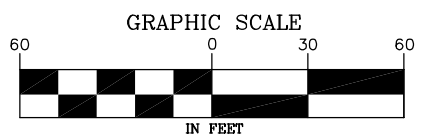
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ATTACHMENT 8

File: W:\S4_CINGULAR\18301\SITES\1040 WEST HARTLAND\2587\ZD\WEST HARTLAND-ROAD CURVATURE.DWG Date: 4/20/2011 1:33:37 PM Plotted: 4/20/2011 1:34:26 PM User: Luittoni, Paul



1 SITE ACCESS MAP
 C02 SCALE: 1" = 30' FULL SIZE
 1" = 60' 11 X 17



BASEMAP NOTES:
 1. BASE MAPPING PREPARED BY CHA FROM AN OCTOBER 2009 AND DECEMBER 2010 FIELD SURVEY.

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CHA PROJECT NO:
 18301 - 1040 - 1101

NO.	SUBMITTAL		
0	04/20/11	ISSUED CSC CERTIFICATE	
	BY: PAL	CHK: PAL	APP'D: RAB

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:
 SR2587
 SITE NAME:
 WEST HARTLAND
 SITE ADDRESS:
 95 BALANCE ROCK ROAD
 EAST HARTLAND, CT
 06027
 HARTFORD COUNTY

SHEET TITLE
 SITE ACCESS MAP

SHEET NUMBER
 EX-1

ATTACHMENT 9

NEST SURVEY REPORT

Northern Saw-whet Owl (*Aegolius acadicus*), Balance Rock Road, East Hartland, CT.

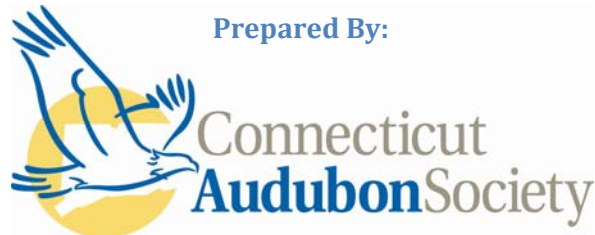
Submitted to:

Dean Gustafson
Professional Soil Scientist/Senior Wetland Scientist

Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457-1847

18 April 2011

Prepared By:



Connecticut Audubon Society, 2325 Burr Street, Fairfield, CT 06824

Northern Saw-whet Owl Nest Survey Report

Proposed construction of a telecommunications facility and an associated service road on Balance Rock Road, East Hartland, CT, will require removal of trees on-site. The CT-DEP Natural Diversity Database indicates that the Northern Saw-whet Owl (*Aegolius acadicus*), a state species of Special Concern (Connecticut Endangered Species Act 1989), occurs in the vicinity of the proposed site. During a prior site visit on 5 January 2011, a Northern Saw-whet Owl was detected in the vicinity of the site during a callback survey (Connecticut Audubon Society survey report, dated 10 January 2011). Site visits for that survey were carried out during a time when wintering Northern Saw-whet Owls are still present in Connecticut. Presence of Saw-whet Owls in January does not necessarily imply that the species breeds locally since the majority of the wintering birds are transient. Therefore additional site visits were undertaken on April 13 and 15 to assess the species' potential presence on-site during its breeding season.



Figure 1: Aerial overview of Balance Rock Road site indicating alternate proposed areas for development (indicated in green, orange and yellow). Map provided by Dean Gustafson, VHB.

METHODS

The proposed site and surrounding habitat was surveyed on two occasions. A nighttime callback survey using recorded owl calls to assess the presence of Northern Saw-whet Owl in the area was done on the night of 13 April 2011. On April 15, the proposed site and its surrounding habitat were searched for potentially suitable nest sites (cavities in large trees) and other signs

of the potential presence of Northern Saw-whet Owls (white-wash on roosting/nesting trees, presence of owl pellets in the area, etc.). Special emphasis was placed on the habitat located in the footprints of the three alternate proposed construction sites. Weather conditions during both surveys were suited for detection of Saw-whet Owls.

RESULTS

Call-back survey

A brief callback survey was carried out near the entrance to the Ring Mountain Hunt Club on the evening of April 13 but did not elicit any responses from local owls.

Tree cavity search

As was established during prior site visits, potentially suitable breeding habitat is present on-site in the form of dead branches and abandoned and weathered woodpecker cavities located in the tops of some area trees. In addition, the site's fairly dense stands of evergreens (mostly Eastern Hemlock) can conceivably provide suitable cover for a daytime roost site and local habitat heterogeneity is sufficient to provide adequate shelter and resources for a healthy prey population. Nevertheless, no sign of Northern Saw-whet Owls was detected during the survey. None of the tree cavities and hollow branches examined showed signs of active use, no owl pellets were found on the site and none of the trees examined showed signs of use as a roost or nest site (often indicated by the present of white uric acid deposits ["white wash"] below perches frequented by these birds).

Additional observations

The following bird species were observed during the site assessments:

Turkey Vulture	Black-capped Chickadee
Mourning Dove	Brown Creeper
Yellow-bellied Sapsucker	Golden-crowned Kinglet
Hairy Woodpecker	Ruby-crowned Kinglet
Pileated Woodpecker	American Robin
Eastern Phoebe	Pine Warbler
American Crow	Dark-eyed Junco
Common Raven	Pine Siskin

This assemblage of species is typical for the site's locality and habitat type and for the time of year. It does not include additional state-listed species.

DISCUSSION & CONCLUSIONS

In Connecticut, Northern Saw-whet Owls can be found in suitable habitat throughout the winter months but most non-breeding individuals have departed for their breeding grounds by late March. Breeding Saw-whet Owls are considered rare to uncommon in the state, although their numbers may be underrepresented due to the difficulty of locating nests (Bevier 1994). Due to

the low number of confirmed breeding pairs found in Connecticut annually, the Northern Saw-whet Owl is included as a 'Species of Special Concern' in Connecticut's Endangered and Threatened Species Act.

Resident Northern Saw-whet Owls should have ceased their courtship and territorial interactions during the time of the surveys and should be on nest. Generally when on nest, birds attempt to not draw the attention of potential predators and a response to the pre-recorded calls used during the night-time survey was not anticipated. However, the absence of a response does indicate that no territorial or late over-wintering individuals remained on-site

Abundant suitable breeding habitat for Northern Saw-whet Owls is present in the general area surrounding Balance Rock Road. The currently proposed construction sites on the property of the Ring Mountain Hunt Club contain mature mixed forest and some younger forest stands. All alternate proposed sites are continuous with significant areas of equally suitable or more suitable habitat in the immediately adjacent Tunxis State Forest. Although potentially suitable habitat for breeding Northern Saw-whet Owls is present on-site, no signs of this species' presence could be detected during these breeding season surveys. In spite of their seeming absence on the site, it would be beneficial to maintain a seasonal restriction on site work between March 1 and July 1 to minimize potential impact on all locally nesting birds and on their young as they disperse into the area post-hatching.

As indicated in a prior report (Connecticut Audubon Society survey report, dated 10 January 2011) I would like to reiterate that the placement of nest boxes for this species is not needed nor recommended. Northern Saw-whet Owls are secondary cavity nesters, utilizing previously excavated cavities, most commonly excavated by Northern Flicker or Pileated Woodpecker but will also use nest boxes (Rasmussen et al. 2008). However, due to the presence of abundant suitable habitat for wintering and potentially for breeding Saw-whet Owls in the area surrounding the proposed site, it is not recommended to place nest boxes to offset loss of potential nesting trees. Placement of nest boxes in less favorable habitat, with elevated exposure to a variety of edge effect-related factors (e.g. increased predation by native and non-native predators, increased disturbance) may have an adverse effect on a local breeding population, if present.



Stratford, 18 April 2011

Twan Leenders, Conservation Biologist
Connecticut Audubon Society
2325 Burr Street, Fairfield, CT 06824

RESOURCES

Bevier, L.R. (1994) The Atlas of Breeding Birds of Connecticut. State Geological and Natural History Survey of Connecticut, Bulletin 113. Department of Environmental Protection, Hartford, Connecticut.

Connecticut Audubon Society. 10 January 2011. Survey Report: Northern Saw-Whet Owl (*Aegolius acadicus*), Balance Rock Road, East Hartland, CT. Submitted to VHB Inc.

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