



Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

September 21, 2016

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 842862
AT&T Site ID: CT1279
85 Paper Mill Road, Woodbury, CT 06798
Latitude: 41° 34' 23.07"/ Longitude: -73° 13' 39.51"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 148-foot level of the existing 150-foot monopole tower at 85 Paper Mill Road in Woodbury, CT. The tower is owned by Crown Castle. The property is owned by Bryan Jodie. AT&T now install three (3) RRUS11s.

This facility was approved by the by the Connecticut Siting Council in Docket No. 375 on August 27, 2009. This approval included the conditions that:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunication services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Mr. William J. Butterly, Jr., First-Selectman, Town of Woodbury, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

Melanie A. Bachman

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4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

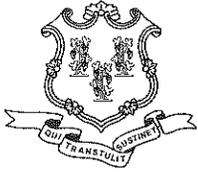
Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. William J. Butterly, Jr., First-Selectman
Town of Woodbury
281 Main Street South
Woodbury, CT 06798

Bryan Jodie
85 Paper Mill Road
Woodbury, CT 06798



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

September 2, 2009

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director

RE: **DOCKET NO. 375** – New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 85 Paper Mill Road, Woodbury, Connecticut.

By its Decision and Order dated August 27, 2009, the Connecticut Siting Council granted a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 85 Paper Mill Road, Woodbury, Connecticut.

Enclosed are the Council's Findings of Fact, Opinion, and Decision and Order.

SDP/RDM/jbw

Enclosures (3)

c: State Documents Librarian

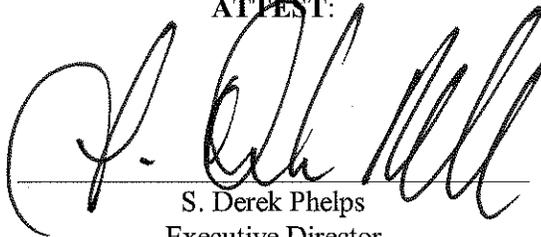
STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

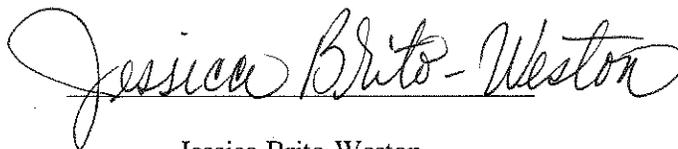
ATTEST:



S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 375 has been forwarded by Certified First Class Return Receipt Requested mail, on September 2, 2009, to all parties and intervenors of record as listed on the attached service list, dated March 5, 2009.

ATTEST:



Jessica Brito-Weston
Office Assistant
Connecticut Siting Council

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	<input type="checkbox"/> E-mail <input checked="" type="checkbox"/> U.S. Mail	New Cingular Wireless PCS, LLC	Christopher B. Fisher, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14 th Floor White Plains, New York 10601
	<input type="checkbox"/> E-mail <input type="checkbox"/> U.S. Mail		
	<input type="checkbox"/> E-mail <input type="checkbox"/> U.S. Mail		
	<input type="checkbox"/> E-mail <input type="checkbox"/> U.S. Mail		
	<input type="checkbox"/> E-mail <input type="checkbox"/> U.S. Mail		

DOCKET NO. 375 – New Cingular Wireless PCS, LLC } Connecticut
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance and operation of a } Siting
telecommunications facility located at 85 Paper Mill Road, } Council
Woodbury, Connecticut. }

August 27, 2009

Findings of Fact

Introduction

1. New Cingular Wireless PCS, LLC (AT&T), in accordance with the provisions of Connecticut General Statutes (CGS) §§ 16-50g through 16-50aa, applied to the Connecticut Siting Council (Council) on February 4, 2009 for the construction, operation, and maintenance of a 150-foot wireless telecommunications facility located at 85 Paper Mill Road in Woodbury, Connecticut. (AT&T 1, pp. 1-2)
2. AT&T is a Delaware corporation with an office in Rocky Hill, Connecticut. AT&T is licensed by the Federal Communications Commission to construct and operate a personal wireless service system in Connecticut. (AT&T 1, p. 2)
3. The party in this proceeding is the applicant. (Transcript 1 – 05/12/09, 3:20 p.m. [Tr. 1], p. 5)
4. The purpose of the proposed facility is to provide wireless service for AT&T to Routes 47 and 132 and adjacent areas in the northwest section of Woodbury. (AT&T 1, p. 1)
5. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on May 12, 2009, beginning at 3:20 p.m. and continuing at 7:00 p.m. at the Nonnewaug High School, 5 Minortown Road, Woodbury, Connecticut. (Council's Hearing Notice dated April 13, 2009; Tr. 1, p. 2; Transcript 2 – 05/12/09, 7:10 p.m. [Tr. 2], p. 2)
6. The Council and its staff conducted an inspection of the proposed site on May 12, 2009, beginning at 2:00 p.m. The applicant flew a four-foot diameter balloon at the site from 10:45 a.m. to 7:00 p.m. to simulate the height of the proposed tower. Favorable weather conditions were present during the morning and evening hours. Windy condition prevailed during the afternoon, preventing the balloon from reaching its intended height of 150 feet above ground level (agl). (Council's Pre-Hearing Conference memo dated April 24, 2009; AT&T late file of June 12, 2009)
7. Notice of the application was provided to all abutting property owners by certified mail. Public notice of the application was published in the Republican-American on January 29 and 30, 2009. (AT&T 1, Tab 9; AT&T 2, Q. 1, Q. 15)
8. AT&T installed a four-foot by six-foot sign describing the proposed project at the entrance to the site property driveway along Paper Mill Road. The sign also contained hearing and contact information. (AT&T late file of June 12, 2009)
9. Pursuant to CGS § 16-50l(b), AT&T provided notice to all federal, state and local officials and agencies listed therein. (AT&T 1, Tab 8)

State Agency Comment

10. Pursuant to General Statutes § 16-50j(h), on April 13, 2009 and May 15, 2009, the following State agencies were solicited to submit written comments regarding the proposed facility: Department of Environmental Protection (DEP), Department of Public Health (DPH), Council on Environmental Quality (CEQ), Department of Public Utility Control (DPUC), Office of Policy and Management (OPM), Department of Economic and Community Development (DECD), the Department of Transportation (DOT) and the Department of Agriculture (DOAg). (Record)
11. The Council received a written response from the DOT's Bureau of Engineering and Highway Operations on May 5, 2009, stating that the DOT has no comment. (Record)
12. No response was received from the DPH, DOAg, DEP, CEQ, DPUC, OPM, or DECD. (Record)

Municipal Consultation

13. AT&T filed a technical report with the Town of Woodbury on October 21, 2008. AT&T sent correspondence to the town on November 20, 2008, that stated AT&T would offer lease free space on the tower for emergency communications equipment. The town responded by indicating they were interested in placing equipment at the site in the future. (AT&T 1, pp. 7, 15-16, Tab 6)
14. At the request of the Woodbury Zoning Commission, AT&T attended a public zoning meeting on March 10, 2009 to discuss the proposal. The zoning commission did not comment on the proposal at the hearing. (AT&T 4)
15. The Woodbury Land Use office, through First Selectman Paul Hinckley, provided a limited appearance statement to the Council on June 10, 2009. The statement presented an analysis of how the proposed facility complies with the Town's Zoning Regulations in regards to the siting of telecommunication facilities. (Town of Woodbury limited appearance statement of June 10, 2009)

Public Need for Service

16. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Council Administrative Notice Item No. 7)
17. In issuing cellular licenses, the Federal government has preempted the determination of public need for cellular service by the states, and has established design standards to ensure technical integrity and nationwide compatibility among all systems. (Council Administrative Notice Item No. 7)
18. The Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 7)
19. The Telecommunications Act of 1996, a Federal law passed by the United States Congress, prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting

with the effect of prohibiting the provision of personal wireless service. (Council Administrative Notice Item No. 7)

20. In an effort to ensure the benefits of wireless technologies to all Americans, Congress enacted the Wireless Communications and Public Safety Act of 1999. The purpose of this legislation was to promote public safety through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (AT&T 1, pp. 5-6)
21. AT&T would be able to provide enhanced 911 services to the target service area. (AT&T 1, p. 5)

Site Selection

22. AT&T established a search ring for the target service area in 2007. The search included identification of potential structures that could be used for telecommunications purposes, discussion with town officials regarding suitable land for development, and the examination of town records to identify potential telecommunications sites. (AT&T 1, pp. 6-7)
23. The original search ring consisted of a 1.8-mile diameter circle centered north of the Hotchkissville section of Woodbury. The ring was revised to an approximate 0.5-mile diameter circle centered on the south end of Kavanaugh Hill in the Hotchkissville area. (AT&T 1, Tab 2, Tab 3)
24. The nearest existing tower facility to the proposed site is a 150-foot monopole located at 478 Good Hill Road in Woodbury, approximately 1.8 miles southeast of the proposed site. AT&T is located at the 124-foot level of this facility; coverage does not extend to the target service area. (AT&T 1, Tab 1)
25. AT&T did not identify any structures suitable to provide coverage to the target service area. (AT&T 1, p. 6)
26. After determining there were no viable structures within the search area, AT&T searched for properties suitable for tower development. AT&T investigated 16 parcels and selected one for tower development. The 15 rejected parcels and reasons for their rejection are as follows:
 - a) Firehouse on Route 47, Woodbury – parcel too small, visual impact high;
 - b) Tufte Sites 1 & 2, Woodbury – would not achieve coverage objectives;
 - c) Tietz Sites 1 & 2, Woodbury – would not achieve coverage objectives;
 - d) Gibbons Property, Weekepeemee Road, Woodbury – would not achieve coverage objectives;
 - e) Flanders Land Trust (various locations), Woodbury - would not achieve coverage objectives;
 - f) Green Property, Woodbury - no response from owner;
 - g) Lizbro Inc. Property, Woodbury – parcel too small;
 - h) Siemon Property, Woodbury - no response from owner;
 - i) Graham Property, Woodbury – would not achieve coverage objectives;
 - j) Good Property, Woodbury - would not achieve coverage objectives;
 - k) Poskas Property, Woodbury - would not achieve coverage objectives;
 - l) Palesty Property, Woodbury - would not achieve coverage objectives; and
 - m) Ram Property (various), Woodbury – would not achieve coverage objectives.(AT&T, Tab 2; Tr. 1, pp. 47-49)

Facility Description

27. The proposed facility is located on a 34.1-acre parcel owned by Jodie Bryan at 85 Paper Mill Road in Woodbury (refer to Figure 1). The property is developed with a residence and several outbuildings (refer to Figures 1 & 2). (AT&T 1, p. 8; AT&T 2, Q. 3)
28. The parcel is zoned Open Space-100, a designation for two-acre residential lots. (AT&T 1, p. 8; Tr. 1, pp. 49-50)
29. The tower site is located in the central portion of the property, at the top of the southerly extension of Kavanaugh Hill, a north-south oriented ridge. (AT&T 1, Tab 3)
30. The property is developed with a single-family residence and several outbuildings, accessed from Paper Mill Road. (AT&T 1, Tab 3)
31. AT&T proposes to construct a 150-foot self-supporting monopole at the site in a level, semi-open area. (AT&T 1 p. 8, Tab 3)
32. The tower would be designed to support four levels of antennas and Town of Woodbury emergency communication antennas. (AT&T 1 pp. 7-8; Tr. 1, p. 22)
33. The tower and foundation would be designed to support a possible 10 to 20 foot extension but any such an extension would require Council approval. (AT&T pp. 20-22; pp. 33-36)
34. AT&T proposes to construct a 50-foot by 75-foot equipment compound within a 60-foot by 100-foot lease area at the base of the tower, sufficient space to accommodate four telecommunication carriers. The compound would be enclosed by an eight-foot high chain link fence. (AT&T 1, pp.7-8, Tab 3)
35. Access to the compound would originate from an existing 1,570-foot long gravel driveway off Paper Mill Road, which services not only the proposed site but also the residence of an abutting property owner (Montalbano). A new gravel drive, 12 feet wide and 135 feet long, would extend southward from the existing drive, beyond a barn and pasture, to the tower site. (AT&T 1, p. 8, Tab 3)
36. AT&T's lease for the site includes access via the existing driveway and the proposed new driveway. AT&T would perform certain upgrades of the existing driveway to make it passable for construction vehicles. These upgrades would be addressed in the Development and Management Plan to be submitted to the Council, should the tower application be approved. (Tr. 1, pp. 68-70)
37. The property owner and the adjacent property owner (Montalbano) maintain the driveway. AT&T would not be responsible for maintaining the existing driveway once construction of the site is completed. (AT&T 1, pp. 70-71)
38. Underground utilities would service the compound from an existing transformer and telecommunication pedestal located adjacent to the on-site barn. (AT&T 1, p. 8, Tab 3)
39. AT&T proposes to install six panel antennas on a platform at a centerline height of 147 feet agl. (AT&T 1, p. 8)
40. AT&T proposes to install a 12-foot by 20-foot equipment shelter on a concrete pad within the compound. Emergency power would be provided by a battery that could power the site for approximately eight hours. (AT&T 1, Tab 3; Tr. 1, pp. 27-28)

41. The tower is approximately 720 feet from the north property line (Dolan property), 707 feet from the southern property line (Testanero property), 320 feet to the western property line (Takahshi property) and 405 feet from the east property line (Platt property). (AT&T 1, Tab 3; Tr. 1, p. 23)
42. The tower radius would be contained within the site property. (AT&T 1, Tab 3)
43. The nearest off-site residence to the proposed tower site is approximately 670 feet to the northeast, owned by Vincent and Catherine Montalbano, located at 83 Paper Mill Road. (AT&T 1, Tab 3; AT&T 2, Q. 4)
44. There are fifteen residences within 1,000 feet of the tower site. (AT&T 1, Tab 3)
45. Land use within a quarter-mile of the site is a mix of undeveloped land and residential parcels. (AT&T 1, Tab 3)
46. The tower site is located at an elevation of 526 feet above mean sea level (amsl). Surrounding terrain consists of rolling hills with elevations ranging from 250 feet amsl in the valleys to 900 feet amsl on the surrounding hilltops. (AT&T 1, Tab 3)
47. The estimated construction cost of the facility, not including AT&T's antennas and radio equipment, is:

Tower and foundation	\$200,000.
Site development	60,000.
<u>Utilities</u>	<u>40,000.</u>
<u>Total estimated cost</u>	<u>\$300,000.</u>

(AT&T 1, p. 17)

Environmental Concerns

48. The proposed site is approximately 0.25 miles north and west of the Hotchkissville National Register Historic District, which is located in portions of the Weekepeemee River valley below the south end of Kavanaugh Hill. (AT&T 1, Tab 4; AT&T 2, Q. 9, Q. 11)
49. The State Historic Preservation Office stated the proposed facility would have no adverse effect on cultural resources within the Hotchkissville Historic District. (AT&T 2, Q. 11)
50. AT&T sent correspondence to the Old Woodbury Historical Society and the Woodbury Town Historian, soliciting comment regarding the proposed facility. No response was received from either request. (AT&T 1, Tab 6, Tab 7)
51. The site is not within any designated area indicating the presence of Federally threatened or endangered species or State endangered, threatened or special concern species. (AT&T 1, p. 10)
52. Two oak trees with a diameter of six inches or greater at breast height would be removed to develop the site. (AT&T 1, Tab 3)
53. The site is not near any inland wetland or watercourse or within a designated flood zone. (AT&T 1, p. 16)

54. Minimal filling and grading would be required. Site blasting is not anticipated; any ledge encountered could be removed through chipping. (AT&T 1, Tab 3; AT&T 2, Q. 12)
55. Aircraft hazard obstruction marking or lighting of the tower is not required or proposed. (AT&T 1, Tab 3)
56. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of the proposed AT&T antennas is calculated to be 6% of the standard for Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in areas around the tower. (AT&T 1, Tab 3)

Visibility

57. The proposed tower would be visible year-round from approximately 61 acres within two miles of the proposed site (refer to Figure 3). The tower would be seasonally visible from an additional 23 acres. (AT&T 1, Q. 7)
58. The tower would not be visible from any known hiking trails maintained by the DEP or the Connecticut Forest and Parks Association. A private trail is located on a conservation parcel off Flanders Road, over a mile east of the site, but the tower would not be visible from this area. (AT&T 1, Tab 4; AT&T 2, Q. 6, Q. 7)
59. The tower would be visible year-round from northern areas of the Hotchkissville Historic District, located approximately 0.25 miles southeast of the site. (AT&T 1, Tab 4; AT&T 2, Q. 7)

60. Visibility of the proposed tower from specific locations within a two-mile radius of the site is as follows:

Specific Location and Area Receptors	Visible	Approximate Portion of Tower Visible	Approx. Distance from Tower
Route 47 and Cam Ave intersection 23 residences within this area. 750 feet of roadway.	Yes	75 feet – unobstructed	1.6 miles southeast
Route 47 at #308 1 residence within this area. 600 feet of roadway.	Yes	30 feet – through trees	0.6 miles southeast
Hoop Pole Hill Road at #187 1 residence within this area 320 feet of roadway	Yes	10 feet – unobstructed with hillside as backdrop	0.8 miles west
Hoop Pole Hill Road at #304 2 residences within this area. 440 feet of roadway.	Yes	20 feet – unobstructed with hillside as backdrop	1.2 miles west
Hazel Plain Road at #175 and #142 3 residences within this area. Another 6 residences would have seasonal views. Two sections of roadway totaling 940 feet.	Yes	20 feet - unobstructed with hillside as backdrop	1.3 miles west
Peter Road 360 feet of roadway.	Yes	20 feet – unobstructed	0.9 miles north
Route 132 and Bushy Hill Road intersection 1 residence within this area. 360 feet of roadway.	Yes	75 feet - unobstructed	0.9 miles north
Route 132 near # 74/76 2 residences within this area. 500 feet of roadway.	Yes	75 feet unobstructed	0.3 miles southeast
83 Paper Mill Road, rear deck	Yes	Through trees	670 feet northeast

(AT&T 1, Tab 4; AT&T 2, Q. 7; Tr. 2, pp. 18-20; AT&T late file of June 11, 2009)

AT&T - Existing and Proposed Wireless Coverage

61. AT&T operates in both the cellular (800 MHz) and PCS (1900 MHz) frequency bands. AT&T is designing the site with a signal level threshold of -82 dBm, sufficient for in-vehicle coverage. (AT&T 3, Q. 4; AT&T late file of June 12, 2009)
62. AT&T currently has no reliable, continuous coverage in Woodbury along Routes 47 and 132 north of Hotchkissville (refer to Figure 4). AT&T's existing signal level in this area ranges from -82 dBm to -105 dBm (800 MHz system). (AT&T 2, Q. 13)
63. Installing antennas at the 150 feet agl would provide approximately 2.5 miles of reliable coverage (800 MHz) to Route 47 and approximately 2.8 miles of reliable coverage to Route 132 (refer to Figure 5). Coverage would also be provided to portions of Hoop Pole Bridge Road, Sprain Brook Road, Paper Mill Road, Peter Road, Cross Brook Road, Painter Hill Road, and Hazel Plain Road. (AT&T 2, Q. 13)

64. The site would provide a cellular coverage footprint of 11.8 square miles with an antenna height of 150 feet. (AT&T late file of June 12, 2009)
65. Reducing the antenna height to 140 or 130 feet agl would cause a slight degradation of coverage along the periphery of the cellular coverage footprint. The cellular coverage footprint at 140 feet and 130 feet is approximately 11.3 square miles and 10.8 square miles, respectively. (AT&T 2, Q. 13, Q. 14; AT&T late file of June 12, 2009; Tr. 1, pp. 30-31, 52-54)
66. An antenna height of 130 feet would allow for cellular handoff to AT&T sites to the south and southeast. There are no AT&T sites to the north. (AT&T 2, Q. 13, Q. 14; Tr. 1, pp. 63-64)

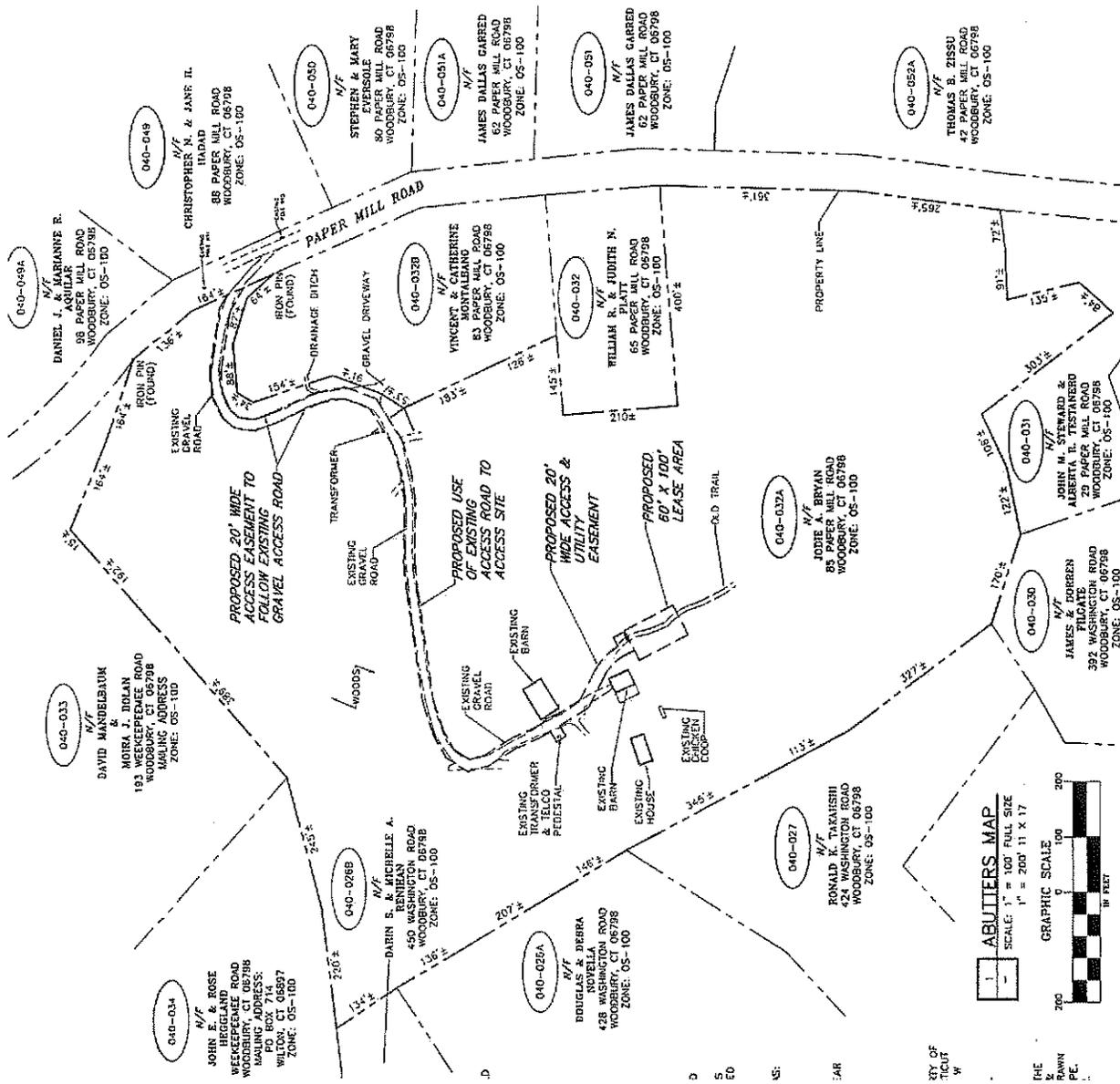


Figure 1: Location of site at 85 Paper Mill Road, Woodbury. (AT&T 1, Tab 3)

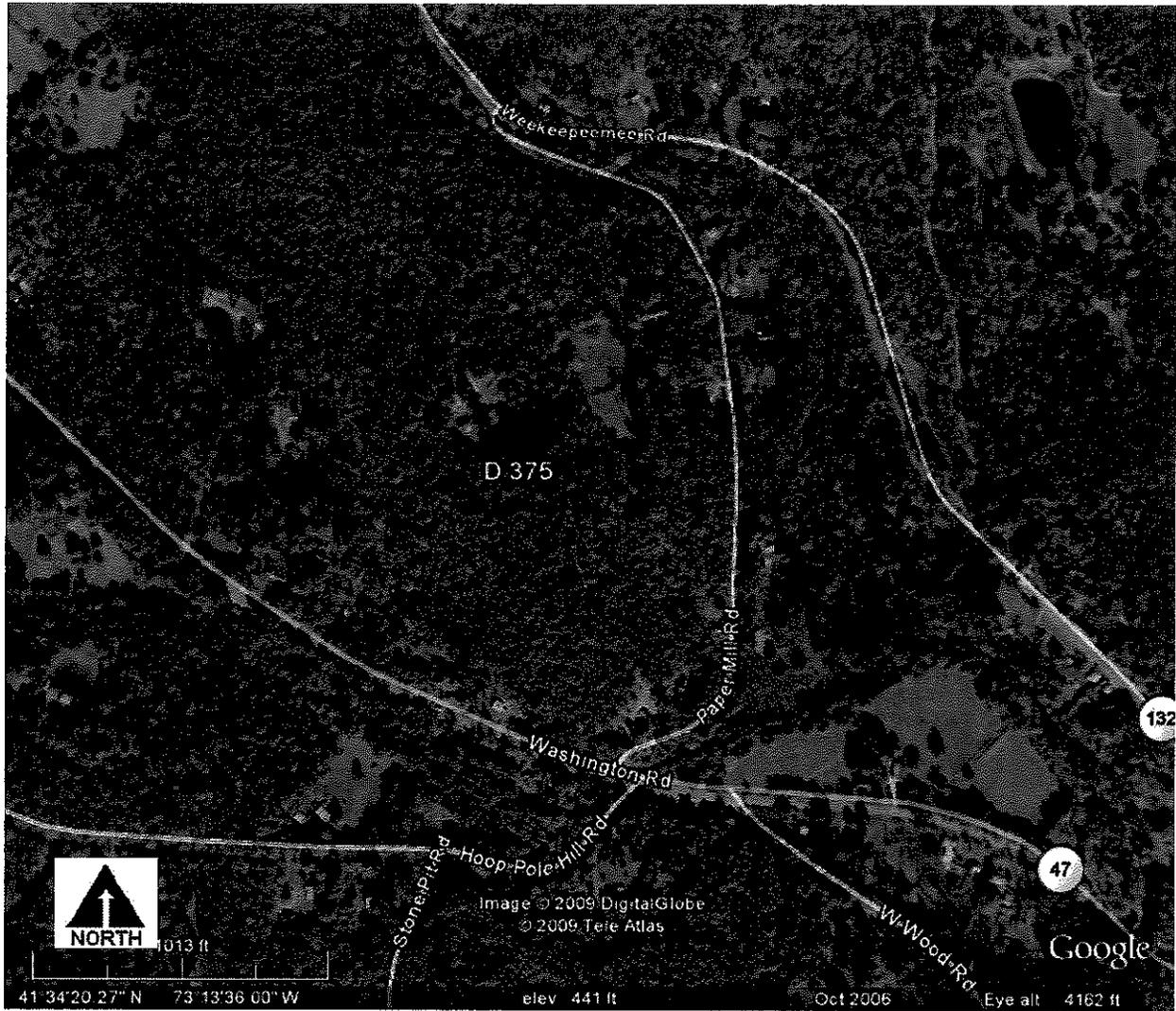


Figure 2: Location of site at 85 Paper Mill Road, Woodbury.
(AT&T 1, Tab 3)

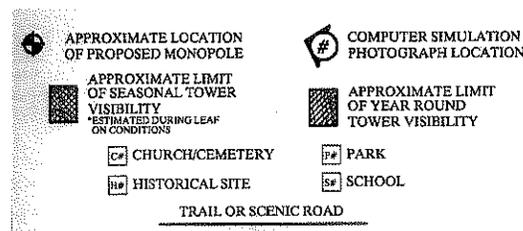
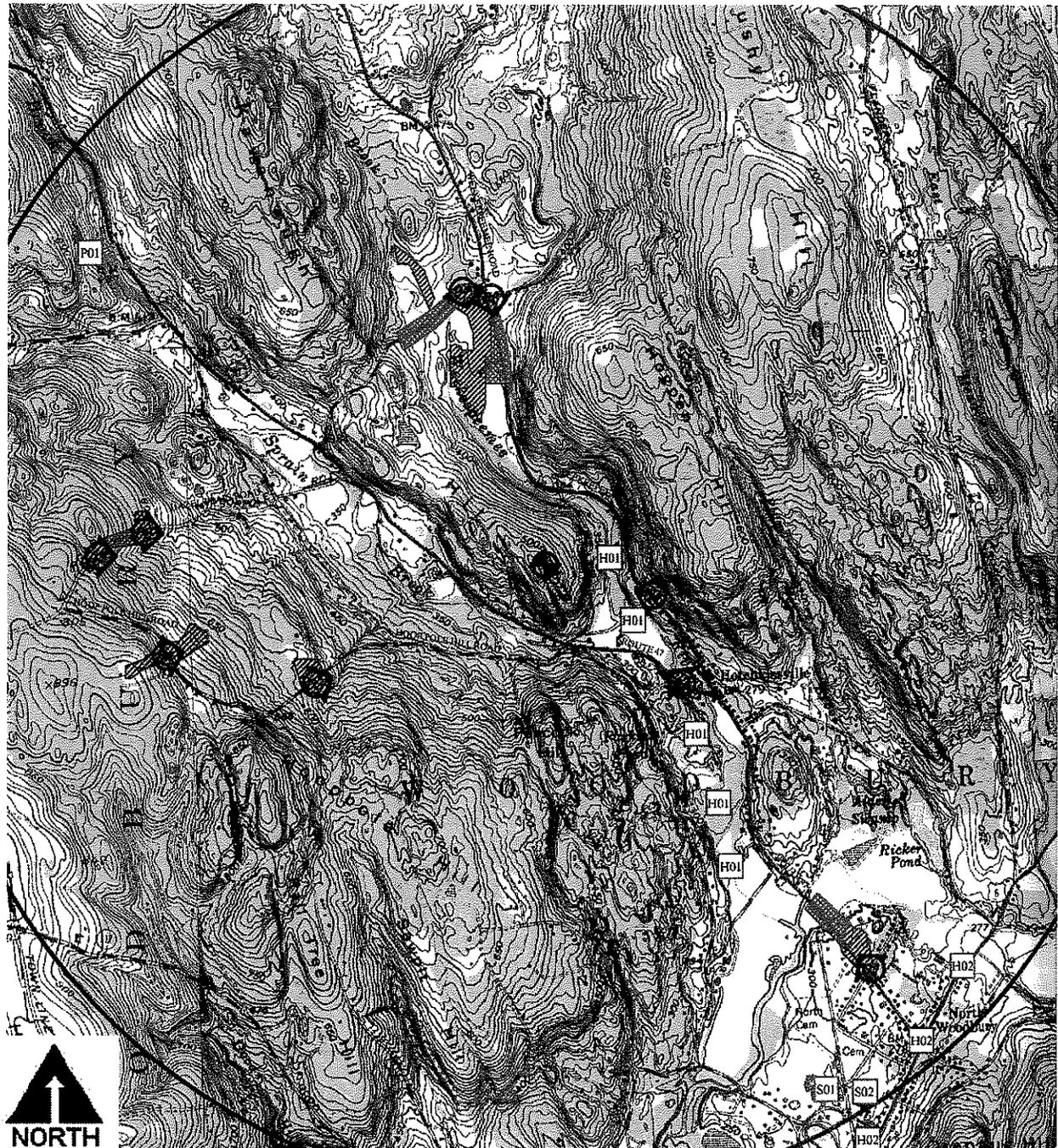


Figure 3: Projected visibility of proposed site. (AT&T 2, Tab D)

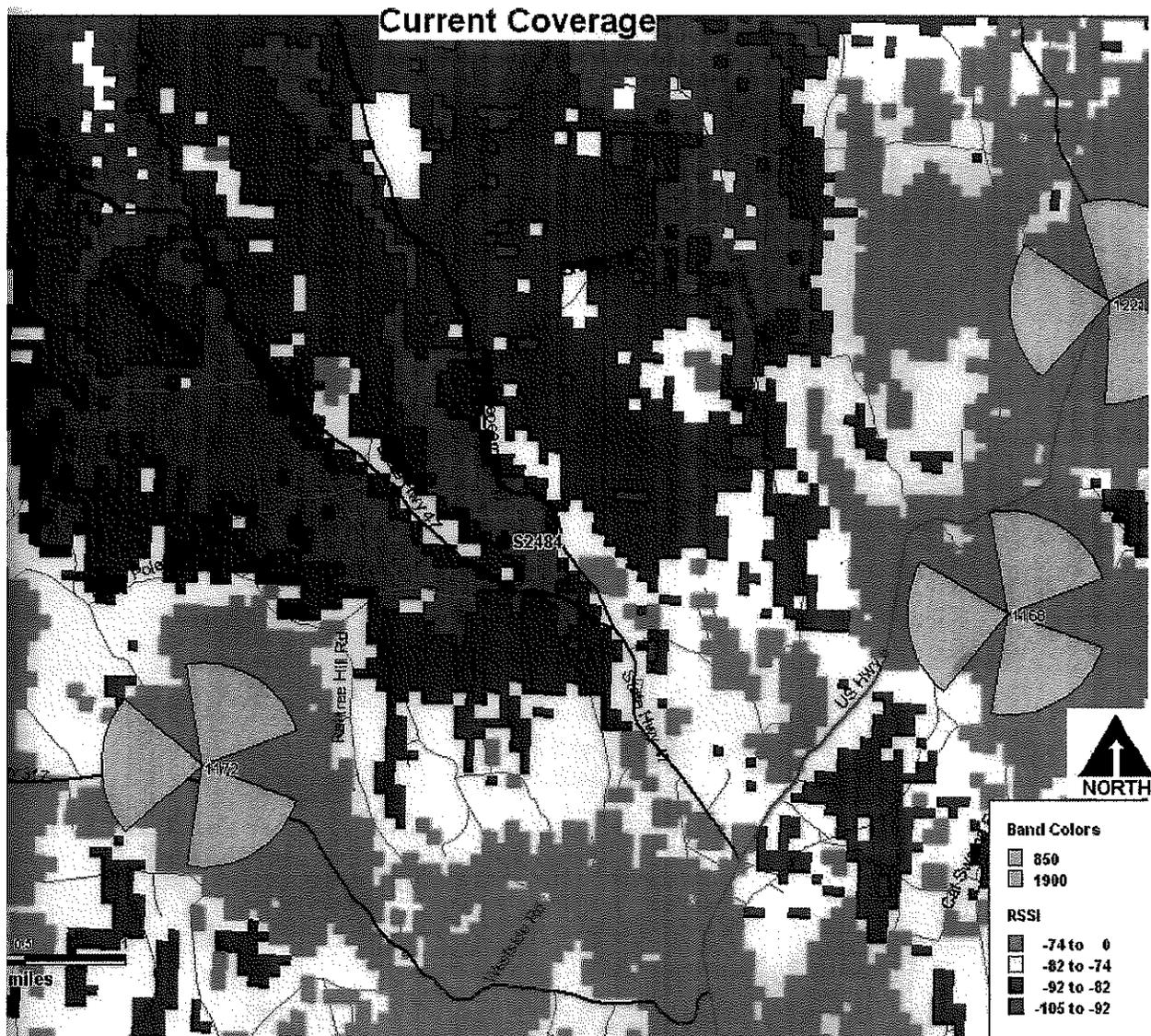


Figure 4: AT&T existing cellular coverage. (AT&T 2, Tab I)

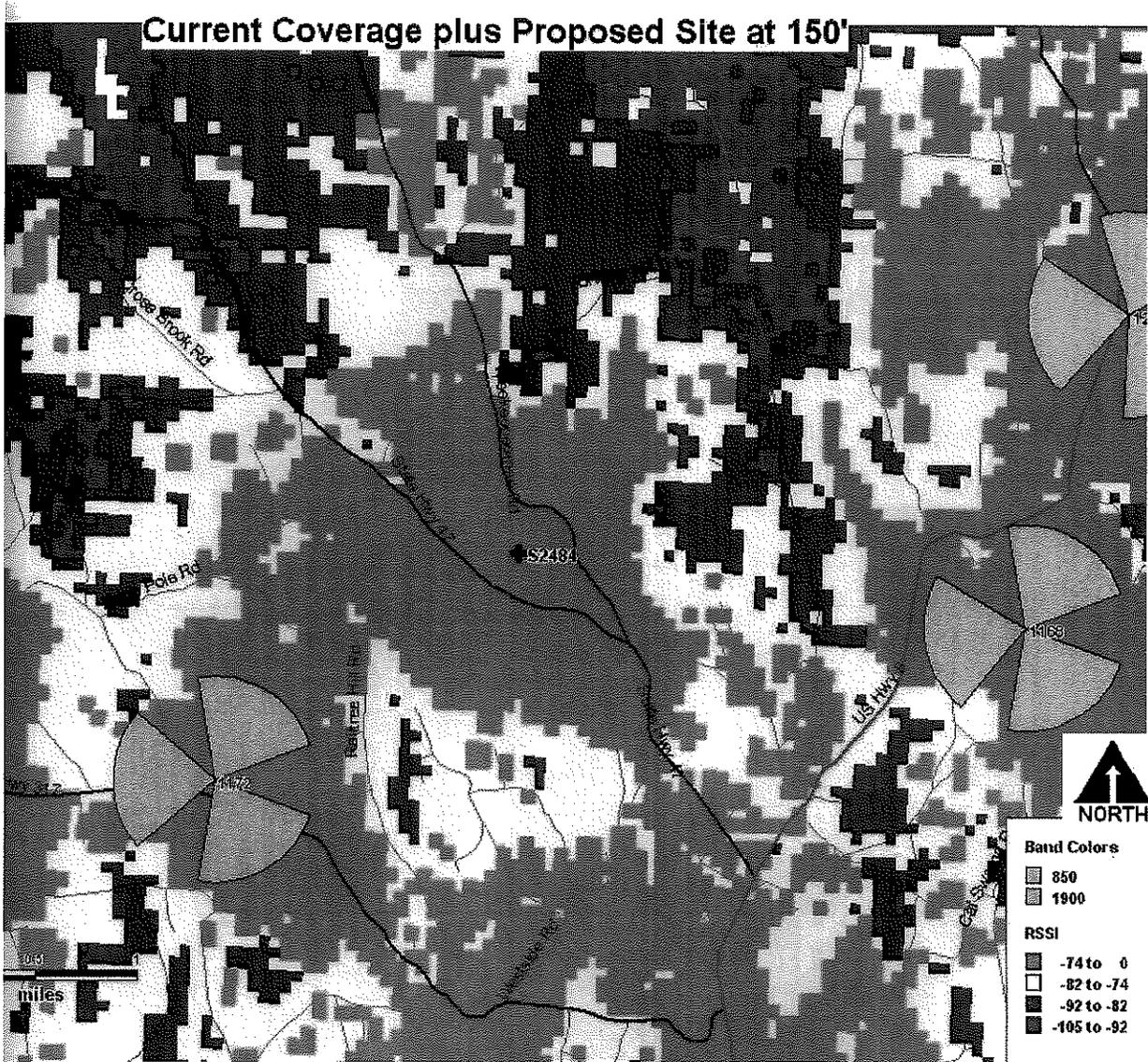


Figure 5: AT&T proposed cellular coverage with antennas mounted at 150 feet agl. (AT&T 1, Tab I)

DOCKET NO. 375 – New Cingular Wireless PCS, LLC } Connecticut
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance and operation of a } Siting
telecommunications facility located at 85 Paper Mill Road, }
Woodbury, Connecticut. } Council

August 27, 2009

Opinion

On February 4, 2009, New Cingular Wireless PCS, LLC (AT&T) applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance and operation of a wireless telecommunications facility located at 85 Paper Mill Road in Woodbury, Connecticut. The proposed facility would provide AT&T with wireless service to Routes 47 and 132, and adjacent areas in the Hotchkissville section of Woodbury.

AT&T proposes to construct a 150-foot monopole and an associated compound on a 34-acre residentially developed parcel that is located on the south summit of Kavanaugh Hill, northeast of Route 47. Paper Mill Road, a residentially developed road, is located in the valley below the hill. The tower site is located near a small pasture on the property. The nearest residence (Montalbano property) is located 670 feet northeast and downhill from of the tower site. The tower radius would be contained within the site parcel. AT&T would construct a 50-foot by 75-foot equipment compound at the base of the tower.

The tower site would be accessed by an existing driveway that serves the host property and the Montalbano property and a new 135-foot gravel drive extending from where the current driveway ends at an outbuilding and a pasture. The town has indicated to the Council that the existing driveway serving the residences does not conform to town specifications. Aware of this problem, AT&T plans to upgrade portions of the existing driveway to allow for construction vehicles to access the site. After the tower is constructed, the maintenance of the driveway will revert back to the property owner.

AT&T proposes to install six panel antennas on a platform at a centerline height of 147 feet. The town expressed interest in placing emergency communication whip antennas on top of the tower but no formal installation plan has yet been presented.

AT&T proposes to operate 800 MHz (cellular) and 1900 MHz (PCS) equipment at this site. AT&T currently has no reliable, continuous cellular or PCS coverage on Routes 47 or 132 north of the site. The proposed site would provide coverage to 2.5 miles of Route 47 and 2.8 miles of Route 132. Although an examination of coverage models indicates a lower tower height would only degrade coverage to the north, a 150-foot tower would provide sufficient height for other telecommunication companies to meet similar coverage objectives.

Based on the lack of suitable existing structures and gaps in AT&T's coverage network, the Council finds a need for a new tower. As to the height, the Council finds a 150-foot tower would provide AT&T sufficient coverage to the target service area while allowing tower space for other telecommunication providers that may wish to locate at this site in the future. In addition, AT&T would provide space on the tower for no compensation for any municipal emergency service communication antennas, provided such antennas are compatible with the structural integrity of the tower. Such antennas are expected to be 15 to 20-foot whip antennas installed at the top of the tower.

Development of the site would only require the removal of two mature trees. The site is not within any known habitat of federally threatened or endangered species or State endangered, threatened or special concern species. Although the site is adjacent to the north boundary of the Hotchkissville Historic District, the State Historic Preservation Office determined the proposed tower would have no effect on this cultural resource area.

Development of the site would not affect any wetlands or watercourses. The condition of the access road is of concern of the Council, where steep grades and rough travel surface could lead to runoff issues on Paper Mill Road or adjacent private property. The Council will order that AT&T consult with the Town to resolve issues associated with the existing driveway prior to the submission of the Development and Management Plan. Additionally, proper erosion and sedimentation control measures shall be incorporated into any upgrades to the existing travel surface.

Views of the tower would be from spot areas ranging from 0.3 miles to 1.6 miles away from the tower, with the exception of a near range view of the tower through trees from the rear deck of the abutting Montalbano property. Other residential year-round views include isolated areas where generally one or two homes would have views of the upper portions of the tower, with the closest such area approximately 0.3 miles to the southeast. One residential area with year-round visibility that contains 23 residences is 1.6 miles southeast of the site but the tower would be slightly discernable at such a distance.

According to a methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997), the combined radio frequency power density levels of AT&T's antennas proposed to be installed on the tower have been calculated to amount to 6% of the FCC's Maximum Permissible Exposure, as measured at the base of the tower. This percentage is well below federal and state standards established for the frequencies used by wireless companies. If federal or state standards change, the Council will require that the tower be brought into compliance with such standards. The Council will require that the power densities be recalculated in the event other carriers add antennas to the tower. The Telecommunications Act of 1996 prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions.

Based on the record in this proceeding, the Council finds that the effects associated with the construction, operation, and maintenance of the telecommunications facility at the proposed site, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with policies of the State concerning such effects, and are not sufficient reason to deny this application. Therefore, the Council will issue a Certificate for the construction, operation, and maintenance of a 150-foot monopole telecommunications facility at 85 Paper Mill Road in Woodbury, Connecticut.

<p>DOCKET NO. 375 – New Cingular Wireless PCS, LLC } application for a Certificate of Environmental Compatibility and } Public Need for the construction, maintenance and operation of a } telecommunications facility located at 85 Paper Mill Road, } Woodbury, Connecticut. }</p>	<p>Connecticut Siting Council</p>
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August 27, 2009

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility located at 85 Paper Mill Road, Woodbury, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council’s record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. Prior to the submission of the D&M Plan to the Council, the Certificate Holder shall discuss and resolve issues pertaining to the existing driveway that serves the site property with the Town of Woodbury. Once the driveway issues are resolved, the D&M Plan shall be served on the Town of Woodbury for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities’ antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Woodbury public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Woodbury. Any proposed modifications to this Decision and Order shall likewise be so served.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Republican-American and Voices.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

New Cingular Wireless PCS, LLC

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, New York 10601

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.

Town of Woodbury

First Deed from the Indians 1659



Information on the Property Records for the Municipality of Woodbury was last updated on 9/17/2016.

Parcel Information

Location:	85 PAPER MILL RD	Property Use:	Industrial	Primary Use:	Broadcasting Facility
Unique ID:	240120	Map Block Lot:	040-032A	Acres:	2.30
490 Acres:	0.00	Zone:	OS100	Volume / Page:	0376/0894*
Developers Map / Lot:	19/39	Census:	3621		

Value Information

	Appraised Value	70% Assessed Value
Land	118,750	83,120

	Appraised Value	70% Assessed Value
Buildings	0	0
Detached Outbuildings	254,112	177,880
Total	372,862	261,000

Owner's Information

Owner's Data

BRYAN JODIE A
 % AT&T MOBILITY
 575 MOROSGO DRIVE
 SUITE 13-F WEST TOWER

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Building/Equipment Cell Towers	2010	12	20	240
Fencing Cell Towers	2010			120
Mono Pole Cell Towers	2010			150
Pad Cell Towers	2010			150

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
BRYAN JODIE A	0376	0894*	08/03/2010		No	\$0
BRYAN JODIE A	0251	0215	06/30/2000	Certificate of No Tax	No	\$0

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
BRYAN RALPH D & JODIE A	0222	0581	06/30/1997	Warranty Deed	No	\$260,000

Building Permits

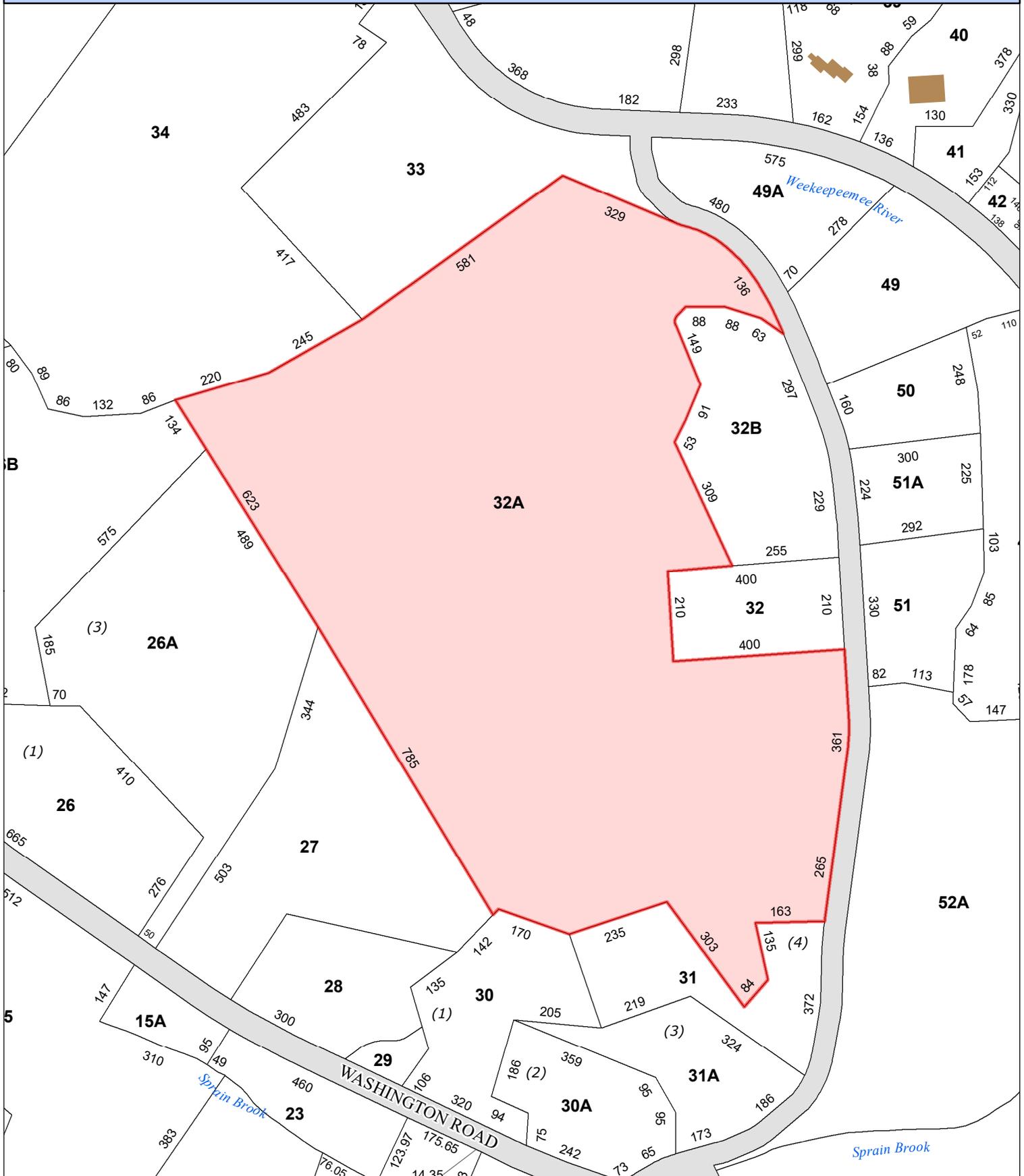
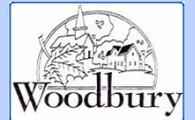
Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
B245-12	Comm Renovations	12/28/2012		Closed	CELL TOWER-INSTALL 3 NEW ANTENNAS - NO GROUND WORK
B031-10	Outbuilding/Yard Item	03/23/2010		CO Needed	INSTALL 150' AT&T CELL TOWER IN A FENCED AREA OF 60X100 TO INCLUDE A PAD ON 4X11 FOR GENERATOR AND

Information Published With Permission From The Assessor

Town of Woodbury, Connecticut - Assessment Parcel Map

Parcel: 040-032A

Address: 85 PAPER MILL RD



Approximate Scale: 1 inch = 300 feet



Map Produced: 12/15/2015

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Woodbury and its mapping contractors assume no legal responsibility for the information contained herein.



PROJECT: LTE 2C
SITE NUMBER: CTL01279
FA NUMBER: 10128161
PTN NUMBER: 2051A066IN
PACE NUMBER: MRCTB018366
CROWN BU#: 857528
SITE NAME: WOODBURY PAPER MILL ROAD
SITE ADDRESS: 85 PAPERMILL ROAD
 WOODBURY, CT 06798



PROJECT INFORMATION

SITE NAME: WOODBURY PAPER MILL ROAD
SITE NUMBER: CTL01279
SITE ADDRESS: 85 PAPERMILL ROAD WOODBURY, CT 06798
FA NUMBER: 10128161
PTN NUMBER: 2051A066IN
PACE NUMBER: MRCTB018366
USID NUMBER: 100435
CROWN BU#: 857528
APPLICANT: AT&T WIRELESS 550 COCHITUATE ROAD SUITE 550 13 AND 14 FRAMINGHAM, MA 01701
TOWER OWNER: CROWN CASTLE INTERNATIONAL 12 GILL STREET, SUITE 5800 WOBURN, MA 01801
JURISDICTION: LITCHFIELD COUNTY
COUNTY: LITCHFIELD
SITE COORDINATES FROM (RFDS): LATITUDE: 41.573194' LONGITUDE: -73.227722' GROUND ELEV.: 525'
PROPOSED USE: TELECOMMUNICATIONS FACILITY
AT&T RF MANAGER: CAMERON SYME (508) 596-7146 cs6970@att.com

SCOPE OF WORK

LTE AWS WILL BE 2C AT THE SITE, Q&D STANDARD. PROPOSED 4C PROJECT SCOPE HEREIN BASED ON RFDS ID # 1125641, VERSION 3.00 LAST UPDATED 07/29/16.

- (3) NEW RRUS-11
- (1) NEW LTE DUS
- (3) NEW 25A BREAKERS

CONTRACTOR SHALL FURNISH ALL MATERIAL WITH THE EXCEPTION OF AT&T SUPPLIED MATERIAL. ALL MATERIAL SHALL BE INSTALLED BY THE CONTRACTOR, UNLESS STATED OTHERWISE.

APPLICABLE BUILDING CODES AND STANDARDS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE: 2003 INTERNATIONAL BUILDING CODE
ELECTRICAL CODE: 2011 NATIONAL ELECTRIC CODE

- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- ADA ACCESS REQUIREMENTS ARE NOT REQUIRED.
- THIS FACILITY DOES NOT REQUIRE POTABLE WATER AND WILL NOT PRODUCE ANY SEWAGE

REV	DATE	DESCRIPTION	BY
0	08/19/16	90% REVIEW	KC
1	09/02/16	FOR PERMIT	KC

I HEREBY CERTIFY THAT THESE DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE LOCATION MAP



DRAWING INDEX

T	TITLE SHEET
SP1	NOTES AND SPECIFICATIONS
SP2	NOTES AND SPECIFICATIONS
A1	COMPOUND PLAN
A2	EQUIPMENT PLAN
A3	ELEVATIONS
A4	ANTENNA PLANS
A5	EQUIPMENT DETAILS
A6	ANTENNA & CABLE CONFIGURATION
A7	CABLE NOTES AND COLOR CODING
A8	GROUNDING DETAILS

PROJECT CONSULTANTS

PROJECT MANAGER: SMARTLINK 85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862 RYAN BURGDORFER (508) 665-8005 Ryan.Burgdorfer@Smartlinkllc.com
SITE ACQUISITION: SMARTLINK 85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862 SHARON KEEFE (978) 930-3918 Sharon.Keefe@Smartlinkllc.com
ENGINEER/ARCHITECT: FULLERTON ENGINEERING 1100 E. WOODFIELD ROAD, SUITE 500 SCHAUMBURG, IL 60173 MILEN DIMITROV (847) 908-8439 MDimitrov@fullertonengineering.com
CONSTRUCTION: SMARTLINK 85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862 MARK DONNELLY (617) 515-2080 mark.donnelly@smartlinkllc.com

DIRECTIONS

SCAN QR CODE FOR LINK TO SITE LOCATION MAP



NOTE: DRAWING SCALES ARE FOR 11"x17" SHEETS UNLESS OTHERWISE NOTED

SITE NAME
WOODBURY PAPER MILL ROAD

SITE NUMBER:
CTL01279
CROWN BU# 857528

SITE ADDRESS
85 PAPERMILL ROAD
WOODBURY, CT 06798

SHEET NAME
TITLE SHEET

SHEET NUMBER
T1

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.

GENERAL CONSTRUCTION

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR/CM – SMARTLINK
OWNER – AT&T WIRELESS
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
- GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
- ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
- WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

- THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
- THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
- ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
- ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
- CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
- CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
- THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
- OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
- NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
- ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
- CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL

CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.

- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
- ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
- JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
- TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

FIBER & POWER CABLE MOUNTING

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES. A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
- CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.
- ALL JUMPERS TO THE ANTENNAS FROM THE MAIN

TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".

- ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
- CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
- CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
A. TEMPERATURE SHALL BE ABOVE 50° F.
B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS
- ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
A. GROUNDING AT THE ANTENNA LEVEL.
B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.



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SITE NAME
**WOODBURY
PAPER MILL ROAD**

SITE NUMBER:
**CTL01279
CROWN BU# 857528**

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
**NOTES AND
SPECIFICATIONS**

SHEET NUMBER
SP1

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NOTICE

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC General Population Exposure Limits.

Follow all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)

CAUTION

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC Occupational Exposure Limits.

Obey all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)



ALERTING SIGN
(FOR CELL SITE BATTERIES)



ALERTING SIGN
(FOR DIESEL FUEL)



ALERTING SIGN
(FOR PROPANE)

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ALERTING SIGNS

WARNING!

DANGER DO NOT TOUCH TOWER!
SERIOUS "RF" BURN HAZARD!

MAINTAIN AN ADEQUATE CLEARANCE BETWEEN TOWER SUPPORTS AND GUY WIRES

FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN A RADIO FREQUENCY ENVIRONMENT COULD RESULT IN SERIOUS INJURY. CONTACT CURRENT MAY EXCEED LIMITS PRESCRIBED IN ANSI, IEEE C95.1-1992 FOR CONTROLLED ENVIRONMENTS.

PROPERTY OF AT&T

AUTHORIZED PERSONNEL ONLY

IN CASE OF EMERGENCY, OR PRIOR TO PERFORMING MAINTENANCE ON THIS SITE, CALL 800-638-2822 AND REFERENCE CELL SITE NUMBER _____

ALERTING SIGN

INFO SIGN #4

GENERAL SIGNAGE GUIDELINES

STRUCTURE TYPE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	STRIPING	NOTICE SIGN	CAUTION SIGN
TOWERS							
MONOPOLE/MONOPINE/MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			AT THE HEIGHT OF THE FIRST CLIMBING STEP, MIN 9 FT ABOVE GROUND
SEC TOWERS/TOWERS WITH HIGH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
LIGHT POLES/FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99% NOTICE SIGN; OVER 99% CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 9FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		NOTICE OR CAUTION SIGN AT NO LESS THAN 9FT ABOVE GROUND; ONLY IF THE EXPOSURE EXCEEDS 90% OF THE GENERAL PUBLIC EXPOSURE AT EXPOSURE AT 6FT ABOVE GROUND OR AT OUTSIDE OF SURFACE OF ADJACENT BUILDING	
TOWERS							
AT ALL ACCESS POINTS TO THE ROOF	X			X			
ON ANTENNAS	X		X	X			
CONCEALED ANTENNAS	X	X		X			
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X		X			
ANTENNAS ON SUPPORT STRUCTURE	X	X		X			
ROOFVIEW GRAPH							
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X		EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFVIEW RESULTS) AT ANTENNA /BARRIER	
RADIATION AREA IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X	DIAGONAL, YELLOW STRIPING AS TO ROOFVIEW GRAPH		
CHURCH STEEPLES	ACCESS TO STEEPLE	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO STEEPLE			CAUTION SIGN AT THE ANTENNAS
WATER STATIONS	ACCESS TO LADDER	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO LADDER			CAUTION SIGN BESIDE INFO SIGN #1, MIN. 9FT ABOVE GROUND

STAY BACK 3 FEET FROM ANTENNA

INFORMATION

AT&T operates telecommunications antennas at this location. Remain at least 3 feet away from any antenna and obey all posted signs.

Contact the owner(s) of the antenna(s) before working closer than 3 feet from the antenna.

Contact AT&T at _____ prior to performing any maintenance or repairs near AT&T antennas. This is Site# _____

Contact the management office if this door/hatch/gate is found unlocked.

INFORMACION

En esta propiedad se ubican antenas de telecomunicaciones operadas por AT&T. Favor mantener una distancia de no menos de 3 pies y obedecer todos los avisos.

Comuníquese con el propietario o los propietarios de las antenas antes de trabajar o caminar a una distancia de menos de 3 pies de la antena.

Comuníquese con AT&T _____ antes de realizar cualquier mantenimiento o reparaciones cerca de la antena de AT&T.

Esta es la estación base maestra. _____

Favor comunicarse con la oficina de la administración del edificio si esta puerta o compuerta se encuentra sin candado.

INFORMATION

ACTIVE ANTENNAS ARE MOUNTED

ON THE OUTSIDE OF THIS BUILDING

BEHIND THIS PANEL

ON THIS STRUCTURE

STAY BACK A MINIMUM OF 3 FEET FROM THESE ANTENNAS

Contact AT&T at _____ and follow their instructions prior to performing any maintenance or repairs closer than 3 feet from the antennas.

This is AT&T site# _____

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WOODBURY PAPER MILL ROAD

SITE NUMBER:
CTL01279 CROWN BU# 857528

SITE ADDRESS
85 PAPERMILL ROAD WOODBURY, CT 06798

SHEET NAME
NOTES AND SPECIFICATIONS

SHEET NUMBER
SP2

INFO SIGN #1

INFO SIGN #2

INFO SIGN #3

SIGNAGE GUIDELINES CHART

NOTES FOR ROOFTOP SITES:

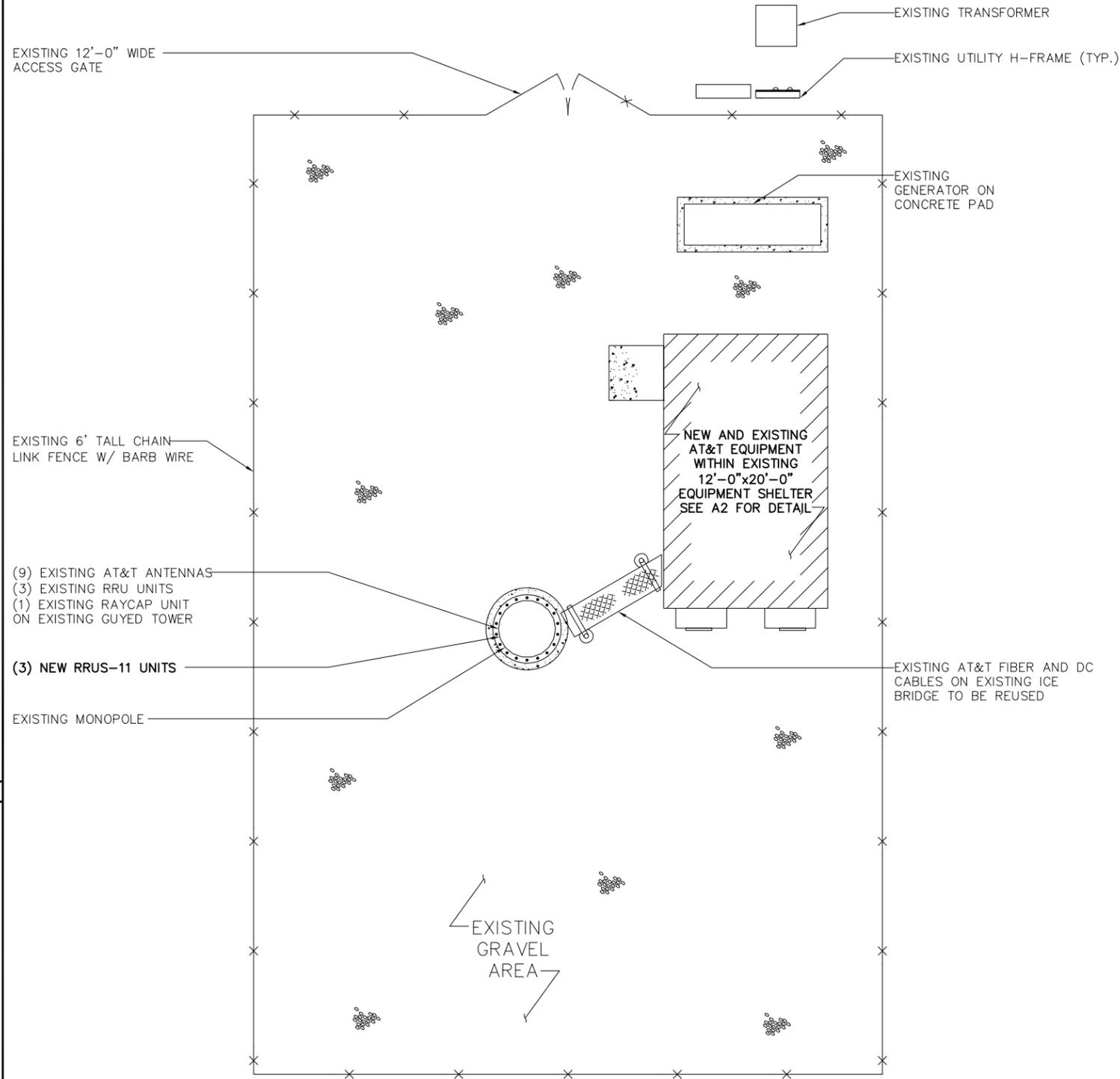
- EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO: THE OUTER EDGE OF THE STRIPED OFF AREA OR THE OUTER ANTENNAS OF THE SECTOR
- IF ROOFVIEWS SHOWS: ONLY BLUE = NOTICE SIGN, BLUE AND YELLOW = CAUTION SIGN, ONLY YELLOW = CAUTION SIGN TO BE INSTALLED
- SHOULD THE REQUIRED STRIPING AREAS INTERFERE WITH ANY STRUCTURE OR EQUIPMENT (A/C, VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.). PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
FIF	FACILITY INTERFACE FRAME
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MCPA	MULTI-CARRIER POWER AMPLIFIER
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
PPC	POWER PROTECTION CABINET
PL	PROPERTY LINE
RBS	RADIO BASED STATION
RET	REMOTE ELECTRIC TILT
RRU	REMOTE RADIO UNIT
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS

	REVISION
	WORK POINT
	UTILITY POLE
	COMPRESSED STONE
	BRICK
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	CHAIN LINK FENCE
	WOOD FENCE
	BELOW GRADE ELECTRIC
	BELOW GRADE TELEPHONE
	OVERHEAD ELECTRIC/TELEPHONE
	SECTION REFERENCE



SITE PHOTO 1 SCALE: N.T.S. 2



SITE PHOTO 2 SCALE: N.T.S. 3



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PAPER MILL ROAD**

SITE NUMBER:
**CTL01279
CROWN BU# 857528**

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
**COMPOUND
PLAN**

SHEET NUMBER
A1

COMPOUND PLAN

SCALE 1" = 10'-0"

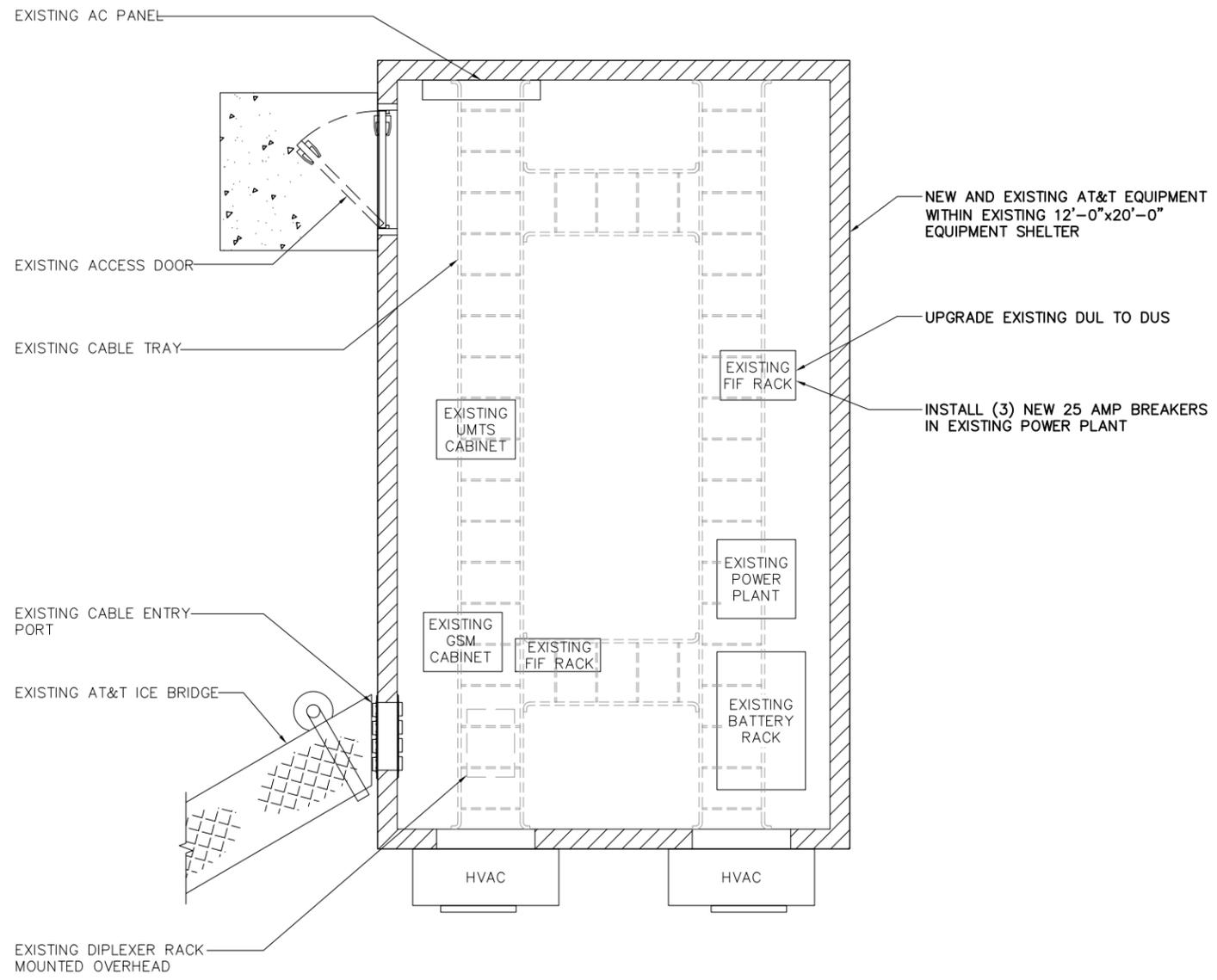
1

SITE PHOTO 2

SCALE: N.T.S.

3

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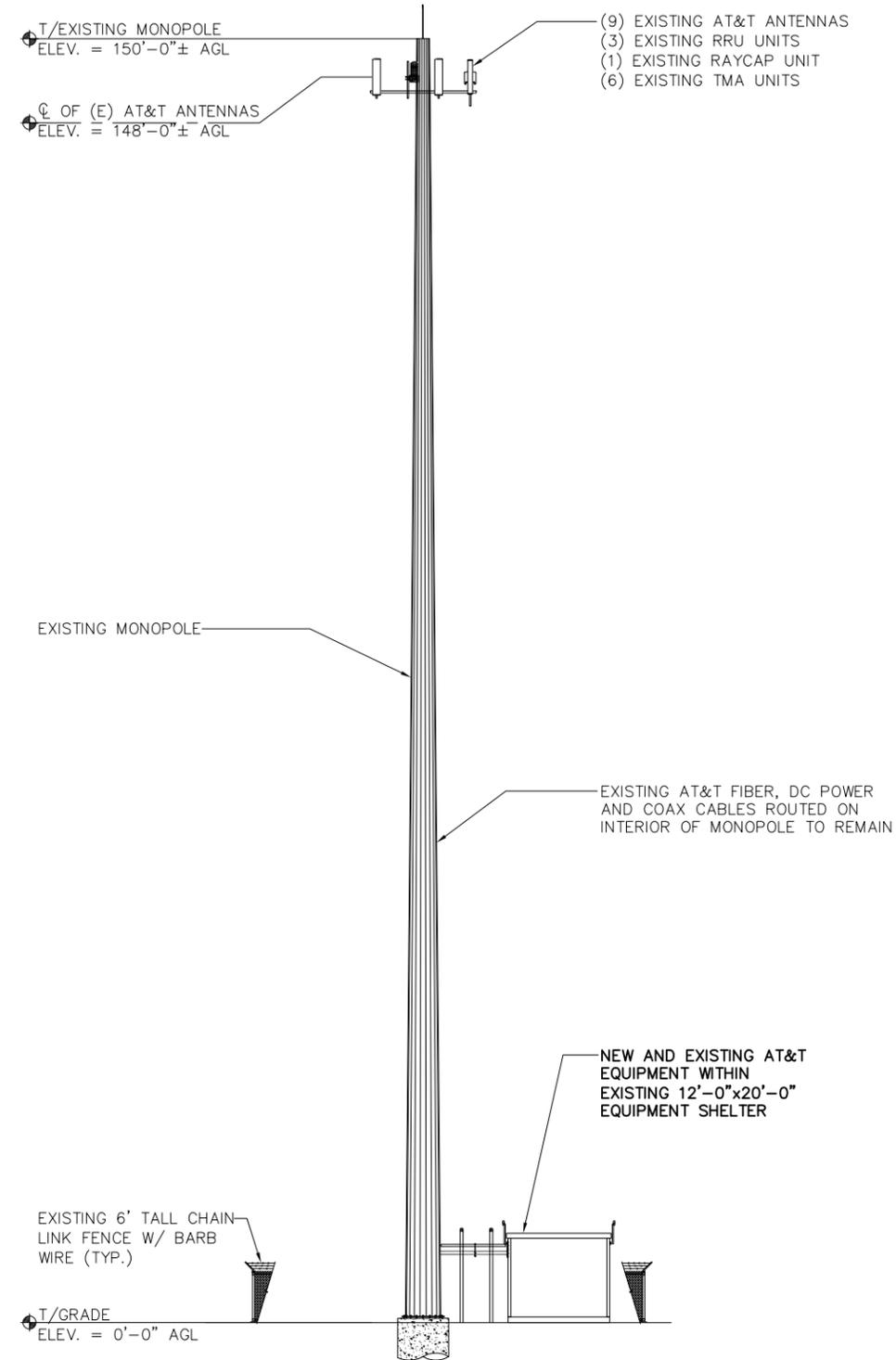
SITE NUMBER:
**CTL01279
CROWN BU# 857528**

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
**EQUIPMENT
PLAN**

SHEET NUMBER
A2

- NOTES:**
1. CALCULATIONS FOR THE STRUCTURE WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
 2. CALCULATIONS FOR THE ANTENNA MOUNTS WERE PREPARED BY FULLERTON AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
 3. CABLES NOT SHOWN FOR CLARITY

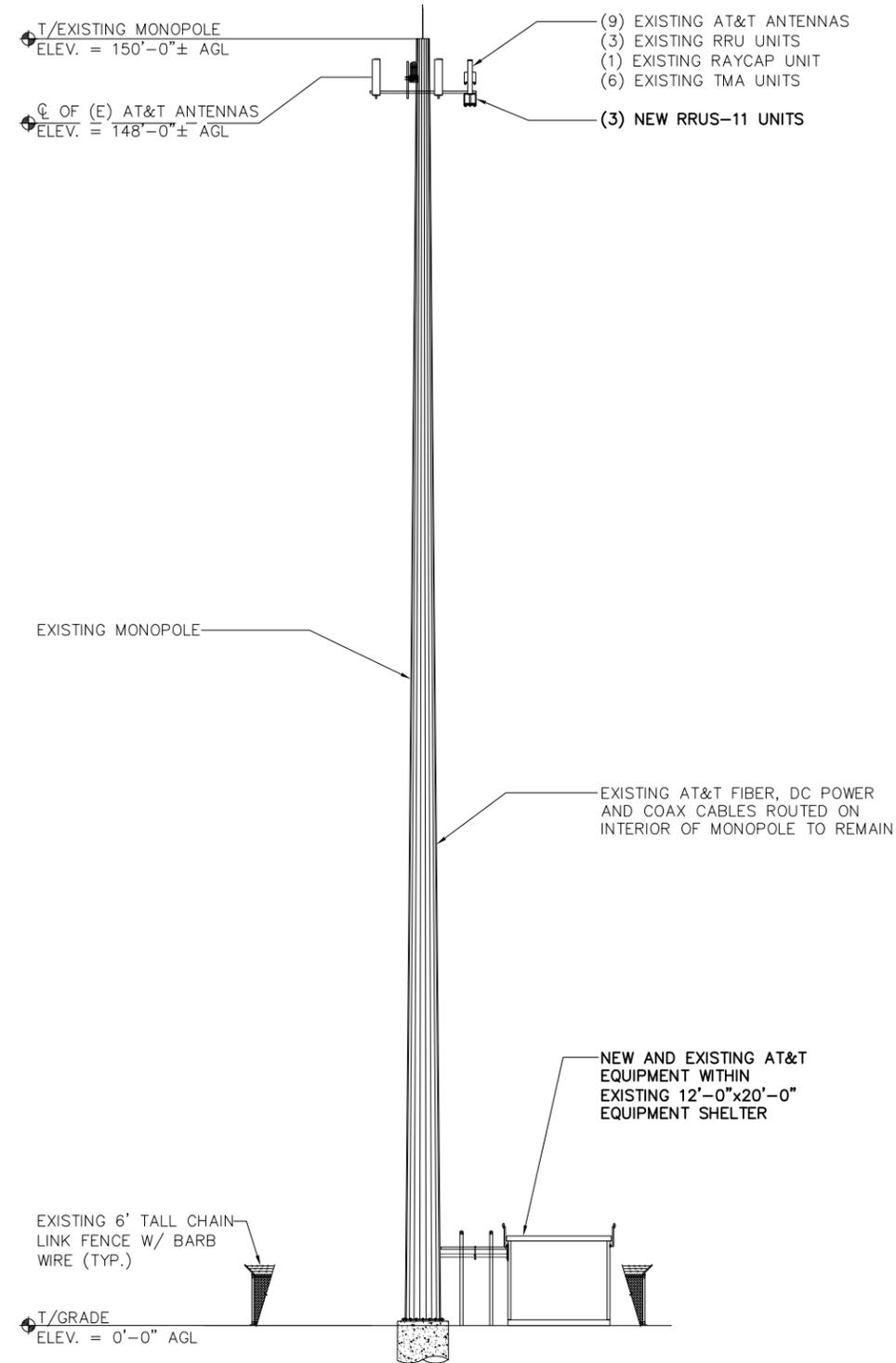


EXISTING ELEVATION

SCALE: 1" = 20'-0"

1

- NOTES:**
1. ALL EQUIPMENT (ANTENNAS, LINES, ETC.) TO BE INSTALLED IN ACCORDANCE WITH PASSING STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE.
 2. TAPE DROP FORMS AND PHOTOGRAPHS TO BE SUBMITTED PER CCI AND AT&T CLOSEOUT REQUIREMENTS.



NEW ELEVATION

SCALE: 1" = 20'-0"

2

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smartlink
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 SUITE 140
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SHEET NAME
ELEVATIONS

SHEET NUMBER
A3

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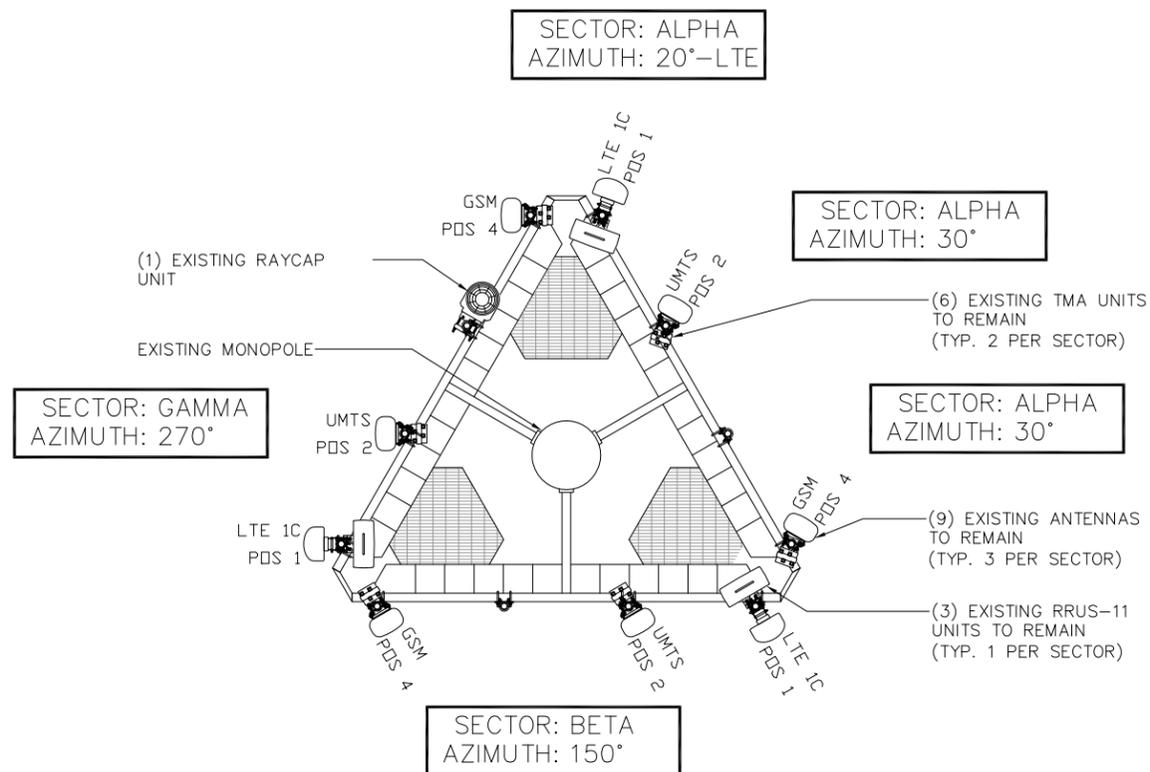
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WOODBURY, CT 06798**

SHEET NAME

**ANTENNA
PLANS**

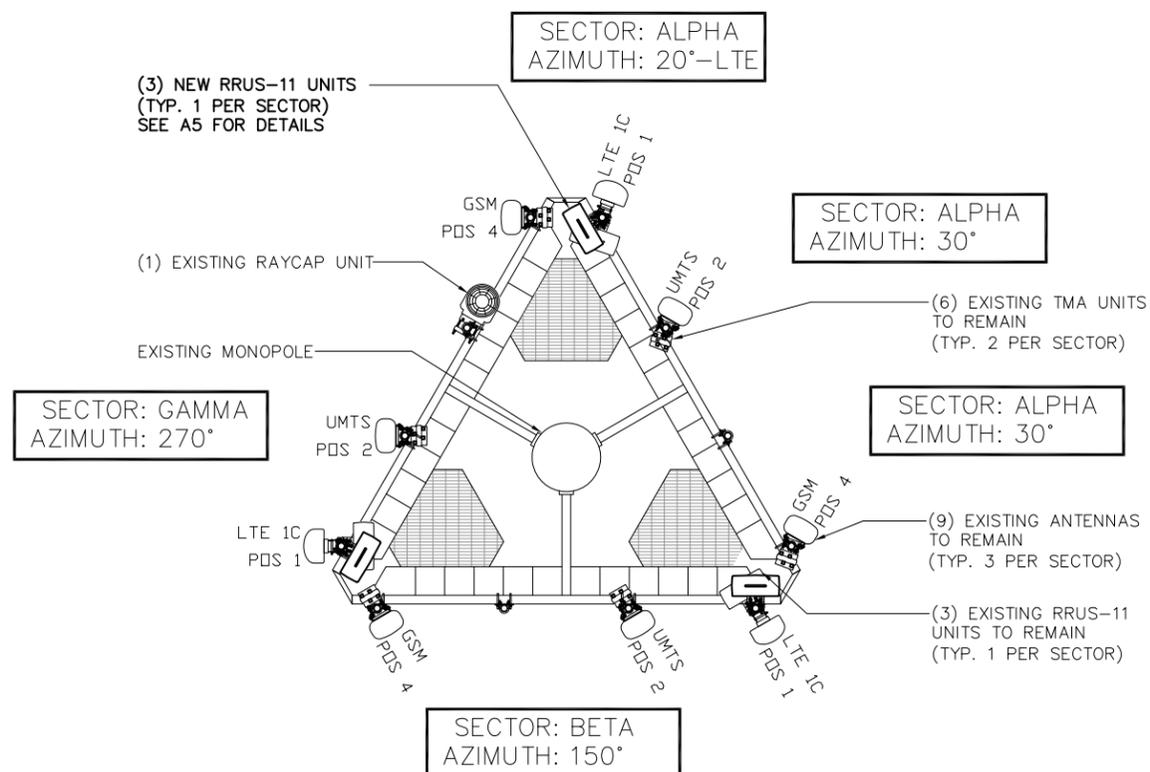
SHEET NUMBER

A4



EXISTING ANTENNA PLAN

SCALE: 3/16" = 1'-0" | 1



FINAL ANTENNA PLAN

SCALE: 3/16" = 1'-0" | 2



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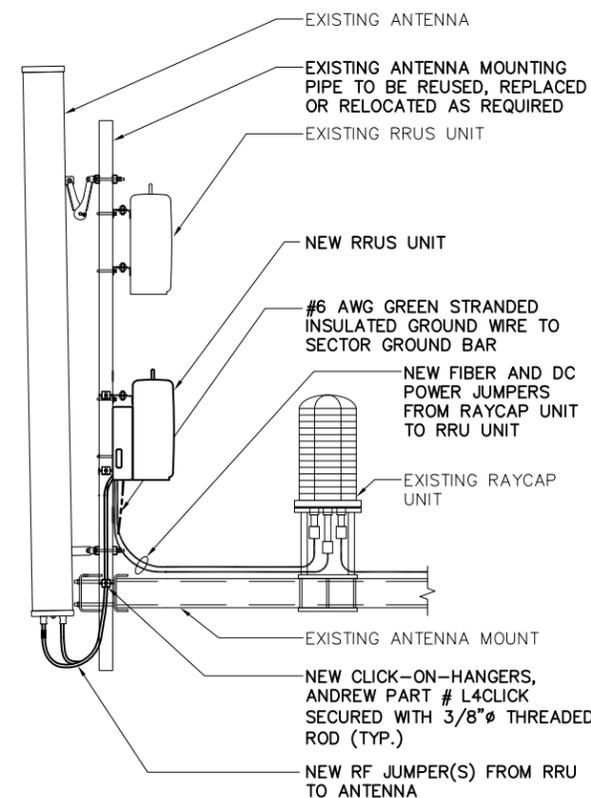
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME

**EQUIPMENT
DETAILS**

SHEET NUMBER

A5

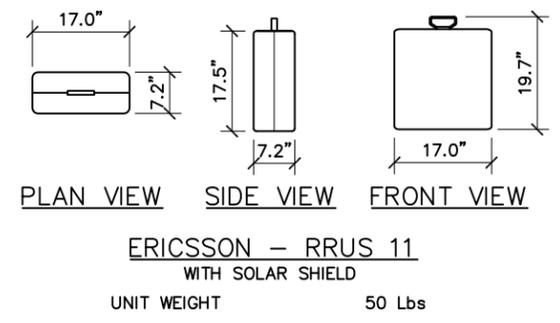


NOT USED SCALE: N.T.S. 1

NOT USED SCALE: N.T.S. 2

ANTENNA SCHEMATIC SCALE: N.T.S. 3

NOT USED SCALE: N.T.S. 4



RRU SPEC SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6

NOT USED SCALE: N.T.S. 7

NOT USED SCALE: N.T.S. 8

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SITE NAME
**WOODBURY
PAPER MILL ROAD**

SITE NUMBER:
**CTL01279
CROWN BU# 857528**

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
**ANTENNA &
CABLE
CONFIGURATION**

SHEET NUMBER
A6

**FINAL ANTENNA CONFIGURATION AND CABLE SCHEDULE
SUPPLIED BY AT&T WIRELESS, FROM RF CONFIG. DATED (07/29/16)**

SECTOR	ANTENNA NUMBER	ANTENNA STATUS & TYPE	ANTENNA MODEL NUMBER	ANTENNA VENDOR	TMA/RRU UNIT	AZIMUTH	ANTENNA CL FROM GROUND	CABLE FEEDER		RAYCAP UNIT
								TYPE	LENGTH	
ALPHA	A-1	(E) LTE1C/2C ANTENNA	AM-X-CD-16-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT AND (1) NEW RRUS-11 UNIT	20°	148'-0"	(1) EXISTING FIBER CABLE	170'-0"	(1) (E) DC6-48-60-18-8F UNIT
	A-2	(E) UMTS ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	30°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	
	A-3	-	-	-	-	-	-	-	-	
	A-4	(E) GSM ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	30°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	
BETA	B-1	(E) LTE1C/2C ANTENNA	AM-X-CD-16-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT AND (1) NEW RRUS-11 UNIT	150°	148'-0"	SEE ANTENNA A-1 FOR CABLE TYPE AND LENGTH		
	B-2	(E) UMTS ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	150°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	
	B-3	-	-	-	-	-	-	-	-	
	B-4	(E) GSM ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	150°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	
GAMMA	C-1	(E) LTE1C/2C ANTENNA	AM-X-CD-14-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT AND (1) NEW RRUS-11 UNIT	270°	148'-0"	SEE ANTENNA A-1 FOR CABLE TYPE AND LENGTH		
	C-2	(E) UMTS ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	270°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	
	C-3	-	-	-	-	-	-	-	-	
	C-4	(E) GSM ANTENNA	P90-14-XLH-RR	POWERWAVE	(1) EXISTING TMA UNIT(S)	270°	148'-0"	1-5/8"φ LDF7-50A	170'-0"	

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- CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
- THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT SHADOWING AND TO MEET THE SYSTEM REQUIREMENTS.
- CONTRACTOR SHALL VERIFY THE HEIGHT OF THE ANTENNA WITH THE AT&T WIRELESS PROJECT MANAGER.
- VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING ANY ANTENNA MOUNT.
- UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL MATERIAL NECESSARY.
- ANTENNA AZIMUTHS ARE DEGREES OFF OF TRUE NORTH, BEARING CLOCKWISE, IN WHICH ANTENNA FACE IS DIRECTED. ALL ANTENNAS (AND SUPPORTING STRUCTURES AS PRACTICAL) SHALL BE ACCURATELY ORIENTED IN THE SPECIFIED DIRECTION.
- CONTRACTOR SHALL VERIFY ALL RF INFORMATION PRIOR TO CONSTRUCTION.
- SWEEP TEST SHALL BE PERFORMED BY GENERAL CONTRACTOR AND SUBMITTED TO AT&T WIRELESS CONSTRUCTION SPECIALIST. TEST SHALL BE PERFORMED PER AT&T WIRELESS STANDARDS.
- CABLE LENGTHS WERE DETERMINED BASED ON THE DESIGN DRAWING. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
- CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

ANTENNA AND CABLING NOTES

SCALE: N.T.S. 1

RF, DC, & COAX CABLE MARKING LOCATIONS TABLE	
NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

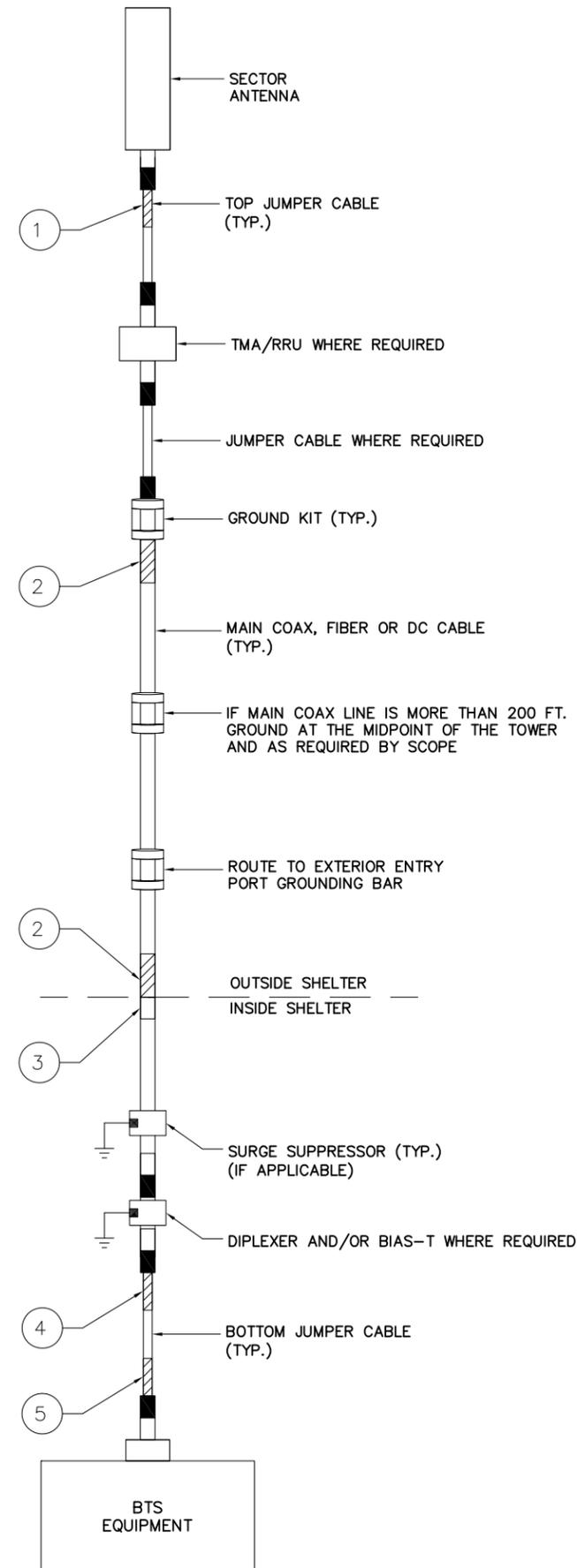
CABLE MARKING DIAGRAM

SCALE: N.T.S. 2

- THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
- THE STANDARD IS BASED ON EIGHT COLORED TAPES-RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
- USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
- WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
- ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
- ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
- ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
- IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING NOTES

SCALE: N.T.S. 3



CABLE COLOR CODING DIAGRAM

SCALE: N.T.S. 4

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SITE NAME
**WOODBURY
PAPER MILL ROAD**

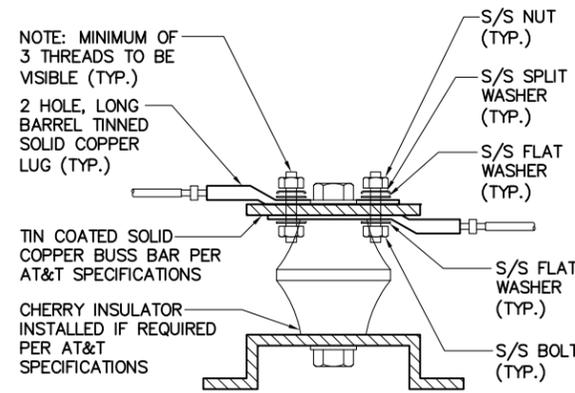
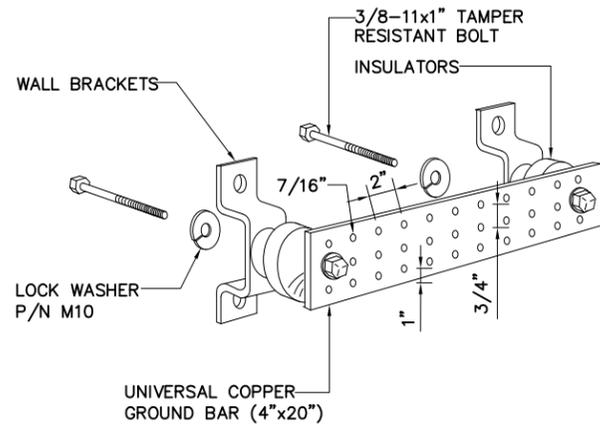
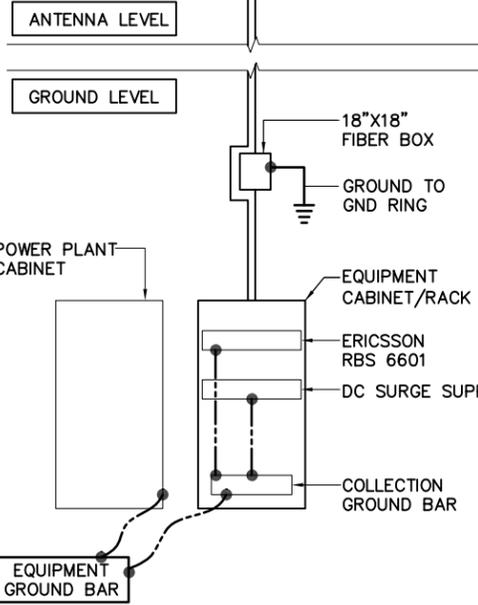
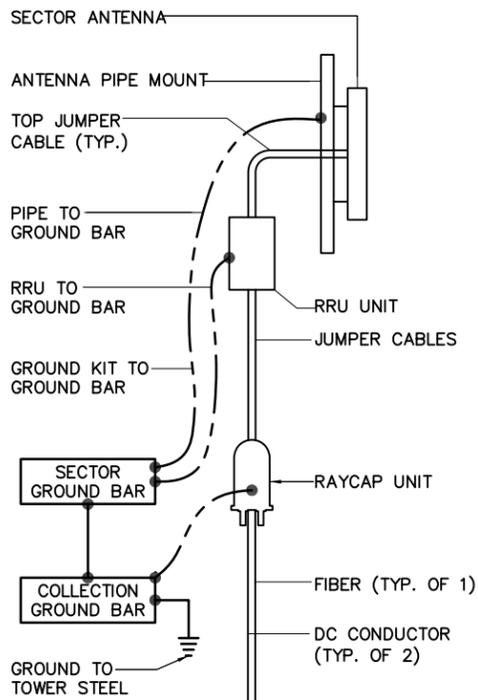
SITE NUMBER:
**CTL01279
CROWN BU# 857528**

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
**CABLE NOTES
AND COLOR
CODING**

SHEET NUMBER
A7

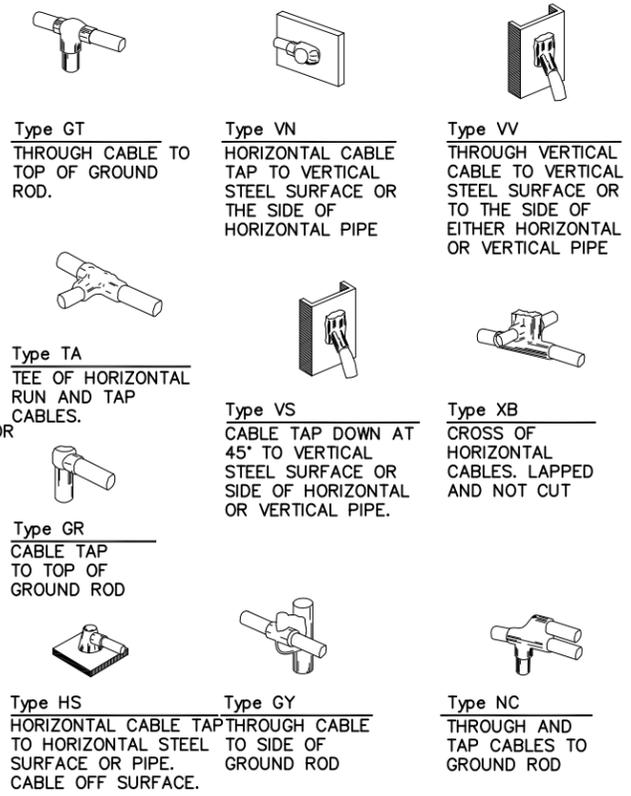
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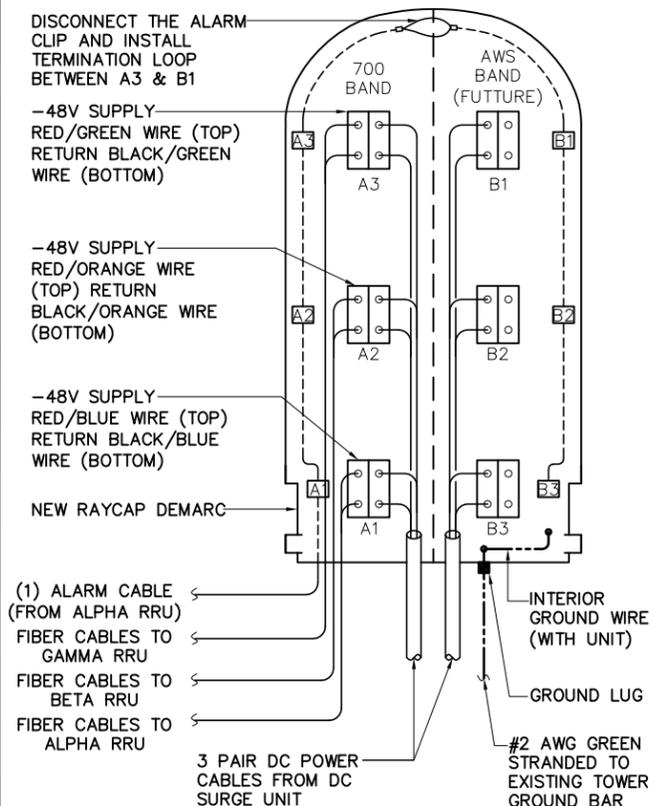
- NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
 2. COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
 3. APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

GROUND BAR DETAIL SCALE: N.T.S. 2

LUG DETAIL SCALE: N.T.S. 3



EXOTHERMIC WELD DETAILS SCALE: N.T.S. 4



RAYCAP DC POWER AND ALARM DET. SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6



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SITE NAME
WOODBURY PAPER MILL ROAD

SITE NUMBER:
CTL01279 CROWN BU# 857528

SITE ADDRESS
**85 PAPERMILL ROAD
WOODBURY, CT 06798**

SHEET NAME
GROUNDING DETAILS

SHEET NUMBER
A8

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Date: July 13, 2016

Charles McGuirt
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277



Crown Castle
2000 Corporate Drive
Canonsburg, PA, 15317
724-416-2000

Subject: Structural Analysis Report

Carrier Designation: AT&T Mobility Co-Locate
Carrier Site Number: CTL01279
Carrier Site Name: Woodbury Paper Mill Rd

Crown Castle Designation: **Crown Castle BU Number:** 857528
Crown Castle Site Name: WOODBURY PAPER MILL RD
Crown Castle JDE Job Number: 380606
Crown Castle Work Order Number: 1267894
Crown Castle Application Number: 348847 Rev. 3

Engineering Firm Designation: **Crown Castle Project Number:** 1267894

Site Data: 85 PAPER MILL ROAD, WOODBURY, Litchfield County, CT
Latitude 41° 34' 23.07", Longitude -73° 13' 39.51"
150 Foot - Monopole Tower

Dear Charles McGuirt,

Crown Castle is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1267894, in accordance with application 348847, revision 3.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 80 mph fastest mile.

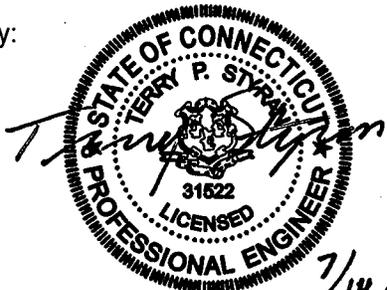
All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at Crown Castle appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects, please give us a call.

Structural analysis prepared by: Allan R. Smith, E.I.T. / AGH

Respectfully submitted by:

Terry P. Styran, P.E.
Senior Project Engineer



7/14/2016

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Additional Calculations

1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by Ehresmann Engineering 1995 in October of 2009. The tower was originally designed for a wind speed of 100 mph per TIA-222-G.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 28.1 mph with 0.75 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
147.0	148.0	3	ericsson	RRUS 11	-	-	-

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
147.0	148.0	1	ericsson	RBS 6601	-	-	2
		1	kmw communications	AM-X-CD-14-65-00T-RET w/ Mount Pipe	12 2 2 1	1-5/8 5/8 1/2 3/8	1
		3	ericsson	RRUS 11			
		2	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		6	powerwave technologies	P90-14-XLH-RR w/ Mount Pipe			
		6	powerwave technologies	TT19-08BP111-001			
		1	raycap	DC6-48-60-18-8F			
	147.0	1	tower mounts	Platform Mount [LP 714-1]			

Notes:

- 1) Existing Equipment
- 2) Existing Equipment –To be removed.

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
147	147	9	-	7770		
		6	Powerwave	TT08-19DB111-001		
137	137	9	-	7770		
		6	Powerwave	TT08-19DB111-001		
127	127	9	-	7770		
		6	Powerwave	TT08-19DB111-001		
117	117	9	-	7770		
		6	Powerwave	TT08-19DB111-001		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Ehresmann Engineering, Inc	4724414	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Ehresmann Engineering, Inc	4724415	CCISITES
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.E., P.C.	4570959	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	150 - 104.5	Pole	TP28.1875x18x0.1875	1	-4.46	836.84	49.1	Pass
L2	104.5 - 68.75	Pole	TP35.75x26.8609x0.25	2	-7.98	1416.31	50.7	Pass
L3	68.75 - 34	Pole	TP43x34.0833x0.3125	3	-13.23	2132.20	47.3	Pass
L4	34 - 0	Pole	TP50x41.0375x0.3125	4	-20.78	2496.46	53.5	Pass
							Summary	
						Pole (L4)	53.5	Pass
						Rating =	53.5	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	23.8	Pass
1	Base Plate	0	37.2	Pass
1	Base Foundation	0	29.8	Pass
1	Base Foundation Soil Interaction	0	52.8	Pass

Structure Rating (max from all components) =	53.5%
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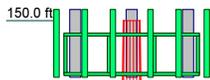
Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lighting Rod 5/8" x 4'	152	(2) TT19-08BP111-001	147
AM-X-CD-16-65-00T-RET w/ Mount Pipe	147	(2) TT19-08BP111-001	147
		DC6-48-60-18-8F	147
AM-X-CD-16-65-00T-RET w/ Mount Pipe	147	RRUS 11	147
		RRUS 11	147
AM-X-CD-14-65-00T-RET w/ Mount Pipe	147	RRUS 11	147
		RRUS 11	147
(2) P90-14-XLH-RR w/ Mount Pipe	147	RRUS 11	147
(2) P90-14-XLH-RR w/ Mount Pipe	147	RRUS 11	147
(2) P90-14-XLH-RR w/ Mount Pipe	147	RRUS 11	147
(2) TT19-08BP111-001	147	6' x 2" Mount Pipe	147
		Platform Mount [LP 714-1]	147

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 53.5%

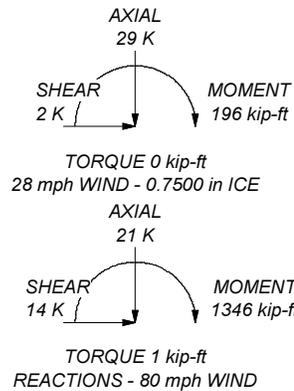
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	45.50	18	0.1875	4.25	18.0000	28.1875	A572-65	2.1
2	40.00	18	0.2500	5.25	26.8609	35.7500	A572-65	3.4
3	40.00	18	0.3125	6.00	34.0833	43.0000	A572-65	5.2
4	40.00	18	0.3125	41.0375	50.0000		A572-65	6.1

104.5 ft

68.8 ft

34.0 ft

0.0 ft



CROWN CASTLE
The Foundation for a Wireless World

Crown Castle
2000 Corporate Drive
Canonsburg, PA, 15317
Phone: 724-416-2000
FAX: 724-416-4623

Job: **BU# 857528**

Project: Crown Castle USA
Client: Crown Castle USA
Code: TIA/EIA-222-F
Path: X:\ENG Work Area\ASmith\1.0 Production\1.0 WIP\857528_WO_1267894\QA-AGH\857528.er

Drawn by: agholami
Date: 07/13/16

App'd: [Signature]
Scale: NTS
Dwg No. E-1

Tower Input Data

There is a pole section.
 This tower is designed using the TIA/EIA-222-F standard.
 The following design criteria apply:

- 1) Tower is located in Litchfield County, Connecticut.
- 2) Basic wind speed of 80 mph.
- 3) Nominal ice thickness of 0.7500 in.
- 4) Ice thickness is considered to increase with height.
- 5) Ice density of 56 pcf.
- 6) A wind speed of 28 mph is used in combination with ice.
- 7) Temperature drop of 50 °F.
- 8) Deflections calculated using a wind speed of 50 mph.
- 9) A non-linear (P-delta) analysis was used.
- 10) Pressures are calculated at each section.
- 11) Stress ratio used in pole design is 1.333.
- 12) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys ✓ Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
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Tapered Pole Section Geometry

Section	Elevation <small>ft</small>	Section Length <small>ft</small>	Splice Length <small>ft</small>	Number of Sides	Top Diameter <small>in</small>	Bottom Diameter <small>in</small>	Wall Thickness <small>in</small>	Bend Radius <small>in</small>	Pole Grade
L1	150.00-104.50	45.50	4.25	18	18.0000	28.1875	0.1875	0.7500	A572-65 (65 ksi)
L2	104.50-68.75	40.00	5.25	18	26.8609	35.7500	0.2500	1.0000	A572-65 (65 ksi)
L3	68.75-34.00	40.00	6.00	18	34.0833	43.0000	0.3125	1.2500	A572-65 (65 ksi)
L4	34.00-0.00	40.00		18	41.0375	50.0000	0.3125	1.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	18.2777	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
	28.6223	16.6635	1650.5160	9.9400	14.3193	115.2655	3303.2038	8.3333	4.6310	24.699
L2	28.2343	21.1158	1889.1396	9.4469	13.6453	138.4457	3780.7650	10.5599	4.2875	17.15
	36.3015	28.1692	4485.0722	12.6025	18.1610	246.9617	8976.0460	14.0873	5.8520	23.408
L3	35.7975	33.4964	4826.3493	11.9886	17.3143	278.7490	9659.0492	16.7514	5.4487	17.436
	43.6633	42.3407	9747.5744	15.1541	21.8440	446.2358	19507.9749	21.1744	7.0180	22.458
L4	43.0357	40.3941	8464.0368	14.4574	20.8470	406.0065	16939.2109	20.2009	6.6726	21.352
	50.7713	49.2838	15372.1931	17.6391	25.4000	605.2045	30764.6134	24.6466	8.2500	26.4

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 150.00-104.50				1	1	1			
L2 104.50-68.75				1	1	1			
L3 68.75-34.00				1	1	1			
L4 34.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	Number Per Row	Clear Spacing	Width or Diameter	Perimeter	Weight
				ft			in	r in	r in	plf
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number		C _A A _A	Weight		
				ft			ft ² /ft	plf		
LDF7-50A(1-5/8")	C	No	Inside Pole	147.00 - 0.00	12	No Ice	0.00	0.82		
						1/2" Ice	0.00	0.82		
						1" Ice	0.00	0.82		
						2" Ice	0.00	0.82		
						4" Ice	0.00	0.82		
LDF4-75A(5/8")	C	No	Inside Pole	147.00 - 0.00	2	No Ice	0.00	0.14		
						1/2" Ice	0.00	0.14		
						1" Ice	0.00	0.14		
						2" Ice	0.00	0.14		
						4" Ice	0.00	0.14		
LDF2-50A(3/8")	C	No	Inside Pole	147.00 - 0.00	1	No Ice	0.00	0.08		
						1/2" Ice	0.00	0.08		
						1" Ice	0.00	0.08		
						2" Ice	0.00	0.08		
						4" Ice	0.00	0.08		
*										
LDF4P-50A(1/2")	C	No	Inside Pole	147.00 - 0.00	2	No Ice	0.00	0.15		
						1/2" Ice	0.00	0.15		
						1" Ice	0.00	0.15		
						2" Ice	0.00	0.15		
						4" Ice	0.00	0.15		
*										

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	150.00-104.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.45
L2	104.50-68.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.38
L3	68.75-34.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.36
L4	34.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.36

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio n	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	150.00-104.50	A	0.881	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.45
L2	104.50-68.75	A	0.842	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.38
L3	68.75-34.00	A	0.791	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.36
L4	34.00-0.00	A	0.750	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.36

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	150.00-104.50	0.0000	0.0000	0.0000	0.0000
L2	104.50-68.75	0.0000	0.0000	0.0000	0.0000
L3	68.75-34.00	0.0000	0.0000	0.0000	0.0000
L4	34.00-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C_{AA} Front ft ²	C_{AA} Side ft ²	Weight K	
Lighting Rod 5/8" x 4'	C	None		0.0000	152.00	No Ice	0.25	0.25	0.03
						1/2" Ice	0.66	0.66	0.03
						1" Ice	0.97	0.97	0.04
						1" Ice	1.49	1.49	0.06
						2" Ice	2.68	2.68	0.14

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						ft
						4" Ice				
** AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.30 7.48 8.37 10.18 14.02	0.07 0.14 0.21 0.38 0.87
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.30 7.48 8.37 10.18 14.02	0.07 0.14 0.21 0.38 0.87
AM-X-CD-14-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.74 6.20 6.66 7.62 9.67	4.02 4.63 5.28 6.68 9.74	0.03 0.08 0.13 0.25 0.61
(2) P90-14-XLH-RR w/ Mount Pipe	A	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.84 6.29 6.76 7.72 9.77	4.05 4.67 5.32 6.73 9.80	0.05 0.09 0.15 0.27 0.63
(2) P90-14-XLH-RR w/ Mount Pipe	B	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.84 6.29 6.76 7.72 9.77	4.05 4.67 5.32 6.73 9.80	0.05 0.09 0.15 0.27 0.63
(2) P90-14-XLH-RR w/ Mount Pipe	C	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.84 6.29 6.76 7.72 9.77	4.05 4.67 5.32 6.73 9.80	0.05 0.09 0.15 0.27 0.63
(2) TT19-08BP111-001	A	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.64 0.75 0.87 1.13 1.77	0.52 0.62 0.73 0.98 1.58	0.02 0.02 0.03 0.05 0.12
(2) TT19-08BP111-001	B	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.64 0.75 0.87 1.13 1.77	0.52 0.62 0.73 0.98 1.58	0.02 0.02 0.03 0.05 0.12
(2) TT19-08BP111-001	C	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.64 0.75 0.87 1.13 1.77	0.52 0.62 0.73 0.98 1.58	0.02 0.02 0.03 0.05 0.12
DC6-48-60-18-8F	B	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.27 1.46 1.66 2.09 3.10	1.27 1.46 1.66 2.09 3.10	0.02 0.04 0.05 0.10 0.21
RRUS 11	A	From Leg	4.00 0.00 1.00		0.0000	147.00	No Ice 1/2" Ice	3.25 3.49 3.74	1.37 1.55 1.74	0.05 0.07 0.09

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
RRUS 11	B	From Leg	4.00	0.00	0.0000	147.00	1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
RRUS 11	C	From Leg	4.00	0.00	0.0000	147.00	2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
RRUS 11	A	From Leg	4.00	0.00	0.0000	147.00	4" Ice			
							No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
							4" Ice			
RRUS 11	B	From Leg	4.00	0.00	0.0000	147.00	No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	3.25	1.37	0.05
RRUS 11	C	From Leg	4.00	0.00	0.0000	147.00	1/2" Ice	3.49	1.55	0.07
							Ice	3.74	1.74	0.09
							1" Ice	4.27	2.14	0.15
							2" Ice	5.43	3.04	0.31
							4" Ice			
							No Ice	3.25	1.37	0.05
							1/2" Ice	3.49	1.55	0.07
6' x 2" Mount Pipe	B	From Leg	4.00	0.00	0.0000	147.00	Ice	2.29	2.29	0.05
							1" Ice	3.06	3.06	0.09
							2" Ice	4.70	4.70	0.23
							4" Ice			
							No Ice	1.43	1.43	0.02
							1/2" Ice	1.92	1.92	0.03
							Ice	2.29	2.29	0.05
Platform Mount [LP 714-1]	C	None			0.0000	147.00	No Ice	37.47	37.47	1.60
							1/2" Ice	44.23	44.23	2.04
							Ice	50.99	50.99	2.48
							1" Ice	64.51	64.51	3.36
							2" Ice	91.55	91.55	5.12
							4" Ice			
							No Ice	37.47	37.47	1.60
**										
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Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice

Comb. No.	Description
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	150 - 104.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-7.89	-0.73	-0.04
			Max. Mx	5	-4.48	-225.77	-0.35
			Max. My	8	-4.48	-0.66	-225.83
			Max. Vy	5	6.85	-225.77	-0.35
			Max. Vx	2	-6.86	0.03	225.83
			Max. Torque	2			-0.86
			Max Tension	1	0.00	0.00	0.00
L2	104.5 - 68.75	Pole	Max. Compression	14	-12.64	-0.73	-0.04
			Max. Mx	5	-8.00	-500.91	-0.65
			Max. My	8	-8.00	-0.99	-501.32
			Max. Vy	5	9.01	-500.91	-0.65
			Max. Vx	2	-9.02	0.32	501.32
			Max. Torque	2			-0.86
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-19.30	-0.73	-0.04
L3	68.75 - 34	Pole	Max. Mx	5	-13.26	-845.16	-0.96
			Max. My	8	-13.26	-1.30	-845.91
			Max. Vy	5	11.22	-845.16	-0.96
			Max. Vx	2	-11.23	0.61	845.91
			Max. Torque	2			-0.86
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28.65	-0.73	-0.04
			Max. Mx	5	-20.83	-1344.22	-1.30
L4	34 - 0	Pole	Max. My	8	-20.83	-1.65	-1345.37
			Max. Vy	5	13.75	-1344.22	-1.30

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-13.76	0.96	1345.37
			Max. Torque	2			-0.86

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	28.65	-0.00	0.00
	Max. H _x	11	20.83	13.74	0.01
	Max. H _z	2	20.83	0.01	13.75
	Max. M _x	2	1345.37	0.01	13.75
	Max. M _z	5	1344.22	-13.74	-0.01
	Max. Torsion	8	0.86	-0.01	-13.75
	Min. Vert	1	20.83	0.00	0.00
	Min. H _x	5	20.83	-13.74	-0.01
	Min. H _z	8	20.83	-0.01	-13.75
	Min. M _x	8	-1345.37	-0.01	-13.75
	Min. M _z	11	-1343.52	13.74	0.01
	Min. Torsion	2	-0.86	0.01	13.75

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	20.83	0.00	0.00	0.00	-0.33	0.00
Dead+Wind 0 deg - No Ice	20.83	-0.01	-13.75	-1345.37	0.96	0.86
Dead+Wind 30 deg - No Ice	20.83	6.86	-11.91	-1164.48	-671.15	0.76
Dead+Wind 60 deg - No Ice	20.83	11.90	-6.87	-671.56	-1163.52	0.46
Dead+Wind 90 deg - No Ice	20.83	13.74	0.01	1.30	-1344.22	0.04
Dead+Wind 120 deg - No Ice	20.83	11.91	6.88	673.82	-1164.82	-0.40
Dead+Wind 150 deg - No Ice	20.83	6.88	11.92	1165.78	-673.41	-0.72
Dead+Wind 180 deg - No Ice	20.83	0.01	13.75	1345.37	-1.65	-0.86
Dead+Wind 210 deg - No Ice	20.83	-6.86	11.91	1164.48	670.46	-0.76
Dead+Wind 240 deg - No Ice	20.83	-11.90	6.87	671.56	1162.83	-0.46
Dead+Wind 270 deg - No Ice	20.83	-13.74	-0.01	-1.30	1343.52	-0.04
Dead+Wind 300 deg - No Ice	20.83	-11.91	-6.88	-673.82	1164.13	0.39
Dead+Wind 330 deg - No Ice	20.83	-6.88	-11.92	-1165.78	672.72	0.72
Dead+Ice+Temp	28.65	0.00	0.00	0.04	-0.73	0.00
Dead+Wind 0 deg+Ice+Temp	28.65	-0.00	-1.90	-195.58	-0.76	0.15
Dead+Wind 30 deg+Ice+Temp	28.65	0.95	-1.64	-169.37	-98.57	0.13
Dead+Wind 60 deg+Ice+Temp	28.65	1.64	-0.95	-97.76	-170.17	0.08
Dead+Wind 90 deg+Ice+Temp	28.65	1.90	0.00	0.06	-196.38	0.01
Dead+Wind 120 deg+Ice+Temp	28.65	1.64	0.95	97.87	-170.18	-0.06
Dead+Wind 150 deg+Ice+Temp	28.65	0.95	1.64	169.47	-98.59	-0.12
Dead+Wind 180 deg+Ice+Temp	28.65	0.00	1.90	195.67	-0.78	-0.15
Dead+Wind 210 deg+Ice+Temp	28.65	-0.95	1.64	169.46	97.03	-0.13
Dead+Wind 240 deg+Ice+Temp	28.65	-1.64	0.95	97.85	168.63	-0.08
Dead+Wind 270 deg+Ice+Temp	28.65	-1.90	-0.00	0.03	194.84	-0.01
Dead+Wind 300 deg+Ice+Temp	28.65	-1.64	-0.95	-97.78	168.64	0.06

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
deg+Ice+Temp						
Dead+Wind 330	28.65	-0.95	-1.64	-169.38	97.05	0.12
deg+Ice+Temp						
Dead+Wind 0 deg - Service	20.83	-0.00	-5.37	-525.83	0.16	0.34
Dead+Wind 30 deg - Service	20.83	2.68	-4.65	-455.13	-262.53	0.30
Dead+Wind 60 deg - Service	20.83	4.65	-2.68	-262.48	-454.97	0.18
Dead+Wind 90 deg - Service	20.83	5.37	0.00	0.51	-525.59	0.02
Dead+Wind 120 deg - Service	20.83	4.65	2.69	263.36	-455.48	-0.16
Dead+Wind 150 deg - Service	20.83	2.69	4.65	455.64	-263.41	-0.28
Dead+Wind 180 deg - Service	20.83	0.00	5.37	525.83	-0.86	-0.34
Dead+Wind 210 deg - Service	20.83	-2.68	4.65	455.13	261.83	-0.30
Dead+Wind 240 deg - Service	20.83	-4.65	2.68	262.47	454.27	-0.18
Dead+Wind 270 deg - Service	20.83	-5.37	-0.00	-0.51	524.89	-0.02
Dead+Wind 300 deg - Service	20.83	-4.65	-2.69	-263.36	454.78	0.16
Dead+Wind 330 deg - Service	20.83	-2.69	-4.65	-455.64	262.71	0.28

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-20.83	0.00	0.00	20.83	0.00	0.000%
2	-0.01	-20.83	-13.75	0.01	20.83	13.75	0.000%
3	6.86	-20.83	-11.91	-6.86	20.83	11.91	0.000%
4	11.90	-20.83	-6.87	-11.90	20.83	6.87	0.000%
5	13.74	-20.83	0.01	-13.74	20.83	-0.01	0.000%
6	11.91	-20.83	6.88	-11.91	20.83	-6.88	0.000%
7	6.88	-20.83	11.92	-6.88	20.83	-11.92	0.000%
8	0.01	-20.83	13.75	-0.01	20.83	-13.75	0.000%
9	-6.86	-20.83	11.91	6.86	20.83	-11.91	0.000%
10	-11.90	-20.83	6.87	11.90	20.83	-6.87	0.000%
11	-13.74	-20.83	-0.01	13.74	20.83	0.01	0.000%
12	-11.91	-20.83	-6.88	11.91	20.83	6.88	0.000%
13	-6.88	-20.83	-11.92	6.88	20.83	11.92	0.000%
14	0.00	-28.65	0.00	-0.00	28.65	0.00	0.000%
15	-0.00	-28.65	-1.90	0.00	28.65	1.90	0.000%
16	0.95	-28.65	-1.64	-0.95	28.65	1.64	0.000%
17	1.64	-28.65	-0.95	-1.64	28.65	0.95	0.000%
18	1.90	-28.65	0.00	-1.90	28.65	-0.00	0.000%
19	1.64	-28.65	0.95	-1.64	28.65	-0.95	0.000%
20	0.95	-28.65	1.64	-0.95	28.65	-1.64	0.000%
21	0.00	-28.65	1.90	-0.00	28.65	-1.90	0.000%
22	-0.95	-28.65	1.64	0.95	28.65	-1.64	0.000%
23	-1.64	-28.65	0.95	1.64	28.65	-0.95	0.000%
24	-1.90	-28.65	-0.00	1.90	28.65	0.00	0.000%
25	-1.64	-28.65	-0.95	1.64	28.65	0.95	0.000%
26	-0.95	-28.65	-1.64	0.95	28.65	1.64	0.000%
27	-0.00	-20.83	-5.37	0.00	20.83	5.37	0.000%
28	2.68	-20.83	-4.65	-2.68	20.83	4.65	0.000%
29	4.65	-20.83	-2.68	-4.65	20.83	2.68	0.000%
30	5.37	-20.83	0.00	-5.37	20.83	-0.00	0.000%
31	4.65	-20.83	2.69	-4.65	20.83	-2.69	0.000%
32	2.69	-20.83	4.65	-2.69	20.83	-4.65	0.000%
33	0.00	-20.83	5.37	-0.00	20.83	-5.37	0.000%
34	-2.68	-20.83	4.65	2.68	20.83	-4.65	0.000%
35	-4.65	-20.83	2.68	4.65	20.83	-2.68	0.000%
36	-5.37	-20.83	-0.00	5.37	20.83	0.00	0.000%
37	-4.65	-20.83	-2.69	4.65	20.83	2.69	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
38	-2.69	-20.83	-4.65	2.69	20.83	4.65	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00035182
3	Yes	5	0.00000001	0.00011221
4	Yes	5	0.00000001	0.00010348
5	Yes	4	0.00000001	0.00006163
6	Yes	5	0.00000001	0.00010452
7	Yes	5	0.00000001	0.00011248
8	Yes	4	0.00000001	0.00036971
9	Yes	5	0.00000001	0.00010152
10	Yes	5	0.00000001	0.00010963
11	Yes	4	0.00000001	0.00005653
12	Yes	5	0.00000001	0.00010970
13	Yes	5	0.00000001	0.00010237
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00072574
16	Yes	4	0.00000001	0.00074924
17	Yes	4	0.00000001	0.00075097
18	Yes	4	0.00000001	0.00073319
19	Yes	4	0.00000001	0.00075159
20	Yes	4	0.00000001	0.00075007
21	Yes	4	0.00000001	0.00072662
22	Yes	4	0.00000001	0.00074069
23	Yes	4	0.00000001	0.00073854
24	Yes	4	0.00000001	0.00071828
25	Yes	4	0.00000001	0.00073805
26	Yes	4	0.00000001	0.00073999
27	Yes	4	0.00000001	0.00007633
28	Yes	4	0.00000001	0.00032833
29	Yes	4	0.00000001	0.00027711
30	Yes	4	0.00000001	0.00002695
31	Yes	4	0.00000001	0.00028137
32	Yes	4	0.00000001	0.00032829
33	Yes	4	0.00000001	0.00007767
34	Yes	4	0.00000001	0.00026720
35	Yes	4	0.00000001	0.00031122
36	Yes	4	0.00000001	0.00002668
37	Yes	4	0.00000001	0.00031003
38	Yes	4	0.00000001	0.00027029

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 104.5	25.558	32	1.6434	0.0081
L2	108.75 - 68.75	12.811	32	1.1885	0.0024
L3	74 - 34	5.728	32	0.7339	0.0010
L4	40 - 0	1.687	32	0.3831	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.00	Lighting Rod 5/8" x 4'	32	25.558	1.6434	0.0081	27025
147.00	AM-X-CD-16-65-00T-RET w/ Mount Pipe	32	24.556	1.6127	0.0076	27025

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 104.5	65.273	7	4.1938	0.0207
L2	108.75 - 68.75	32.746	7	3.0377	0.0062
L3	74 - 34	14.647	7	1.8766	0.0025
L4	40 - 0	4.314	7	0.9797	0.0010

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.00	Lighting Rod 5/8" x 4'	7	65.273	4.1938	0.0207	10703
147.00	AM-X-CD-16-65-00T-RET w/ Mount Pipe	7	62.716	4.1159	0.0195	10703

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
L1	150 - 104.5 (1)	TP28.1875x18x0.1875	45.50	0.00	0.0	39.000	16.0972	-4.48	627.79	0.007
L2	104.5 - 68.75 (2)	TP35.75x26.8609x0.25	40.00	0.00	0.0	39.000	27.2435	-8.00	1062.50	0.008
L3	68.75 - 34 (3)	TP43x34.0833x0.3125	40.00	0.00	0.0	39.000	41.0140	-13.26	1599.55	0.008
L4	34 - 0 (4)	TP50x41.0375x0.3125	40.00	0.00	0.0	38.001	49.2838	-20.83	1872.81	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} F _{bx}	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} F _{by}
L1	150 - 104.5 (1)	TP28.1875x18x0.1875	226.20	25.241	39.000	0.647	0.00	0.000	39.000	0.000
L2	104.5 - 68.75 (2)	TP35.75x26.8609x0.25	501.87	26.078	39.000	0.669	0.00	0.000	39.000	0.000
L3	68.75 - 34 (3)	TP43x34.0833x0.3125	846.63	24.270	39.000	0.622	0.00	0.000	39.000	0.000
L4	34 - 0 (4)	TP50x41.0375x0.3125	1346.3	26.694	38.001	0.702	0.00	0.000	38.001	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio f _v F _v	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio f _{vt} F _{vt}
L1	150 - 104.5 (1)	TP28.1875x18x0.1875	6.87	0.427	26.000	0.033	0.73	0.040	26.000	0.002
L2	104.5 - 68.75 (2)	TP35.75x26.8609x0.25	9.02	0.331	26.000	0.025	0.73	0.018	26.000	0.001
L3	68.75 - 34 (3)	TP43x34.0833x0.3125	11.23	0.274	26.000	0.021	0.72	0.010	26.000	0.000
L4	34 - 0 (4)	TP50x41.0375x0.3125	13.77	0.279	26.000	0.021	0.72	0.007	26.000	0.000

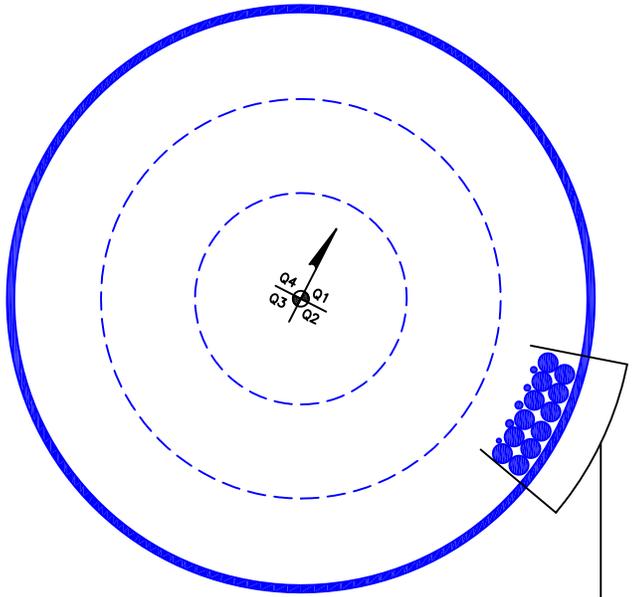
Pole Interaction Design Data

Section No.	Elevation ft	Ratio P P _a	Ratio f _{bx} F _{bx}	Ratio f _{by} F _{by}	Ratio f _v F _v	Ratio f _{vt} F _{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 104.5 (1)	0.007	0.647	0.000	0.033	0.002	0.655	1.333	H1-3+VT ✓
L2	104.5 - 68.75 (2)	0.008	0.669	0.000	0.025	0.001	0.676	1.333	H1-3+VT ✓
L3	68.75 - 34 (3)	0.008	0.622	0.000	0.021	0.000	0.631	1.333	H1-3+VT ✓
L4	34 - 0 (4)	0.011	0.702	0.000	0.021	0.000	0.714	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
L1	150 - 104.5	Pole	TP28.1875x18x0.1875	1	-4.48	836.84	49.1	Pass
L2	104.5 - 68.75	Pole	TP35.75x26.8609x0.25	2	-8.00	1416.31	50.7	Pass
L3	68.75 - 34	Pole	TP43x34.0833x0.3125	3	-13.26	2132.20	47.3	Pass
L4	34 - 0	Pole	TP50x41.0375x0.3125	4	-20.83	2496.46	53.5	Pass
Summary								
Pole (L4)							53.5	Pass
RATING =							53.5	Pass

APPENDIX B
BASE LEVEL DRAWING



- (INSTALLED)
- (1) 3/8" TO 147 FT LEVEL
 - (2) 1/2" TO 147 FT LEVEL
 - (2) 5/8" TO 147 FT LEVEL
 - (12) 1-5/8" TO 147 FT LEVEL

BUSINESS UNIT: 857528 TOWER ID: C_BASELEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#: 857528	
Site Name: WOODBURY PAPER MILL	
App #: 348847, Rev. 3	
Pole Manufacturer: Other	

Reactions

Moment:	1346	ft-kips
Axial:	21	kips
Shear:	14	kips

Anchor Rod Data

Qty:	24	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	57	in

If No stiffeners, Criteria: AISC ASD

<-Only Applicable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension:	46.4 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	23.8% Pass

Rigid
Service, ASD
Fty*ASIF

Plate Data

Diam:	64	in
Thick:	2.25	in
Grade:	50	ksi
Single-Rod B-eff:	6.61	in

Base Plate Results

	Flexural Check
Base Plate Stress:	18.6 ksi
Allowable Plate Stress:	50.0 ksi
Base Plate Stress Ratio:	37.2% Pass

Rigid
Service ASD
0.75*Fy*ASIF
Y.L. Length:
27.37

Stiffener Data (Welding at both sides)

Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

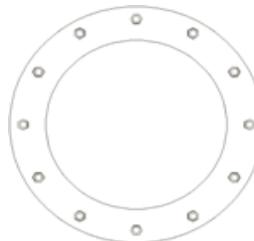
Pole Punching Shear Check: n/a

Pole Data

Diam:	50	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor

ASIF:	1.333	
-------	-------	--



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Monopole Pier and Pad Foundation

BU # : 857528
 Site Name: WOODBURY PAPER MILL F
 App. Number: 348847, Rev. 3
 TIA-222 Revision: **F**



Design Reactions		
Shear, S:	14	kips
Moment, M:	1346	ft-kips
Tower Height, H:	150	ft
Tower Weight, Wt:	21	kips
Base Diameter, BD:	4.17	ft

Foundation Dimensions		
Depth, D:	4.5	ft
Pad Width, W:	24	ft
Neglected Depth, N:	3.5	ft
Thickness, T:	2.50	ft
Pier Diameter, Pd:	6.50	ft
Ext. Above Grade, E:	0.50	ft
BP Dist. Above Pier:	3	in.
Clear Cover, Cc:	3.0	in

Soil Properties		
Soil Unit Weight, γ:	0.090	kcf
Ult. Bearing Capacity, Bc:	12.0	ksf
Angle of Friction, Φ:	0	deg
Cohesion, C_o:	0.000	ksf
Passive Pressure, P_p:	0.000	ksf
Base Friction, μ:	0.30	

Material Properties		
Rebar Yield Strength, F_y:	60000	psi
Concrete Strength, F'_c:	4000	psi
Concrete Unit Weight, δ_c:	0.150	kcf
Seismic Zone, z:	1	

Rebar Properties		
Pier Rebar Size, S_p:	10	
Pier Rebar Quantity, m_p:	34	19
Pad Rebar Size, S_{pad}:	10	
Pad Rebar Quantity, m_{pad}:	31	7
Pier Tie Size, S_t:	4	3
Tie Quantity, m_t:	5	4

Design Checks			
	Capacity/ Availability	Demand/ Limits	Check
<i>Req'd Pier Diam. (ft)</i>	6.5	5.667	OK
<i>Overturing (ft-kips)</i>	2546.95	1346.00	52.8%
<i>Shear Capacity (kips)</i>	52.07	14.00	26.9%
<i>Bearing (ksf)</i>	9.00	1.35	15.0%
<i>Pad Shear - 1-way (kips)</i>	720.35	214.58	29.8%
<i>Pad Shear - 2-way (kips)</i>	1640.15	59.65	3.6%
<i>Pad Moment Capacity (k-ft)</i>	4457.26	599.26	13.4%
<i>Pier Moment Capacity (k-ft)</i>	4819.33	1381.00	28.7%



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**Smartlink LLC on behalf of AT&T
Mobility, LLC
Site FA – 10128161
Site ID – CTV1279 (2C)
USID – 100435
Site Name – Woodbury Paper Mill
Rd
Site Compliance Report**

**85 Paper Mill Road
Woodbury, CT 06798**

Latitude: N41-34-23.50
Longitude: W73-13-39.80
Structure Type: Monopole

Report generated date: September 12, 2016
Report by: Sam Cosgrove
Customer Contact: Kristen Smith

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

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1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	None
Max cumulative simulated RFE level on the Ground Level	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant

The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CTV1279_2017-LTE-Next-Carrier_LTE-2C_mm093q_PTN_...

CD's: 10128161_AE201_160819_CTL01279_REV0. JW RLs 8-23-16

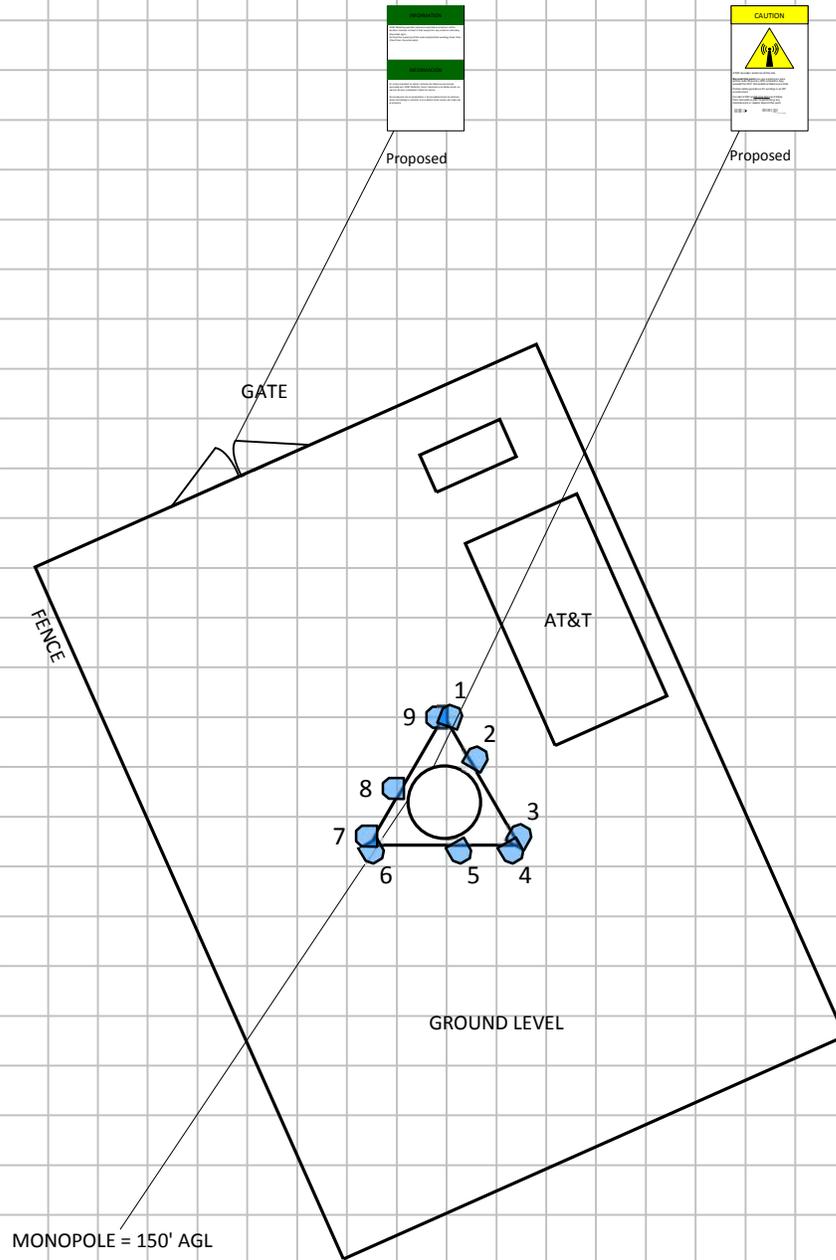
2 Scale Maps of Site

The following diagrams are included:

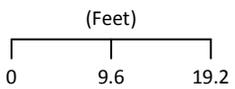
- Site Scale Map
- RF Exposure Diagram
- Elevation View

Scale Map Key		
 <p>Existing Sign</p>	 <p>Proposed Barrier</p>	 <p>GPS Reading</p>
 <p>Proposed Sign</p>	 <p>Existing Barrier</p>	 <p>Anchor Point</p>

Site Scale Map For: Woodbury Paper Mill Rd



% of FCC Public Exposure Limit
Spatial average 0' - 6'



www.sitesafe.com
Site Name: Woodbury Paper Mill Rd
9/12/2016 1:33:26 PM

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

3 Antenna Inventory

The following antenna inventory on this and the following page, were obtained by the customer and were utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z (AGL)
1	AT&T MOBILITY LLC	Kmw AM-X-CD-16-65-00T	Panel	737	20	65	6	13.36	0	0	1	1119.4	107.2'	140.2'	144'
1	AT&T MOBILITY LLC (PROPOSED)	Kmw AM-X-CD-16-65-00T	Panel	2100	20	69	6	14.96	0	0	1	2084.5	107.2'	140.2'	144'
2	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	30	90	4.3	10.37	0	1	0	336.5	109.8'	136'	144.8'
2	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	1900	30	85	4.3	13.27	0	1	0	389.9	109.8'	136'	144.8'
3	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	30	90	4.3	10.37	1	0	0	152.1	114.1'	128.2'	144.8'
4	AT&T MOBILITY LLC	Kmw AM-X-CD-16-65-00T	Panel	737	150	65	6	13.36	0	0	1	1119.4	113.3'	126.6'	144'
4	AT&T MOBILITY LLC (PROPOSED)	Kmw AM-X-CD-16-65-00T	Panel	2100	150	69	6	14.96	0	0	1	2084.5	113.3'	126.6'	144'
5	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	150	90	4.3	10.37	0	1	0	336.5	108.1'	126.6'	144.8'
5	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	1900	150	85	4.3	13.27	0	1	0	389.9	108.1'	126.6'	144.8'
6	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	150	90	4.3	10.37	1	0	0	152.1	99.3'	126.6'	144.8'
7	AT&T MOBILITY LLC	Kmw AM-X-CD-14-65-00T	Panel	737	270	67	4	11.66	0	0	1	792.5	98.7'	128.2'	145'
7	AT&T MOBILITY LLC (PROPOSED)	Kmw AM-X-CD-14-65-00T	Panel	2100	270	62	4	14.36	0	0	1	2624.2	98.7'	128.2'	145'
8	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	270	90	4.3	10.37	0	1	0	336.5	101.4'	133'	144.8'
8	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	1900	270	85	4.3	13.27	0	1	0	389.9	101.4'	133'	144.8'
9	AT&T MOBILITY LLC	Powerwave P90-14-XLH-RR	Panel	850	270	90	4.3	10.37	1	0	0	152.1	105.8'	140.1'	144.8'

NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

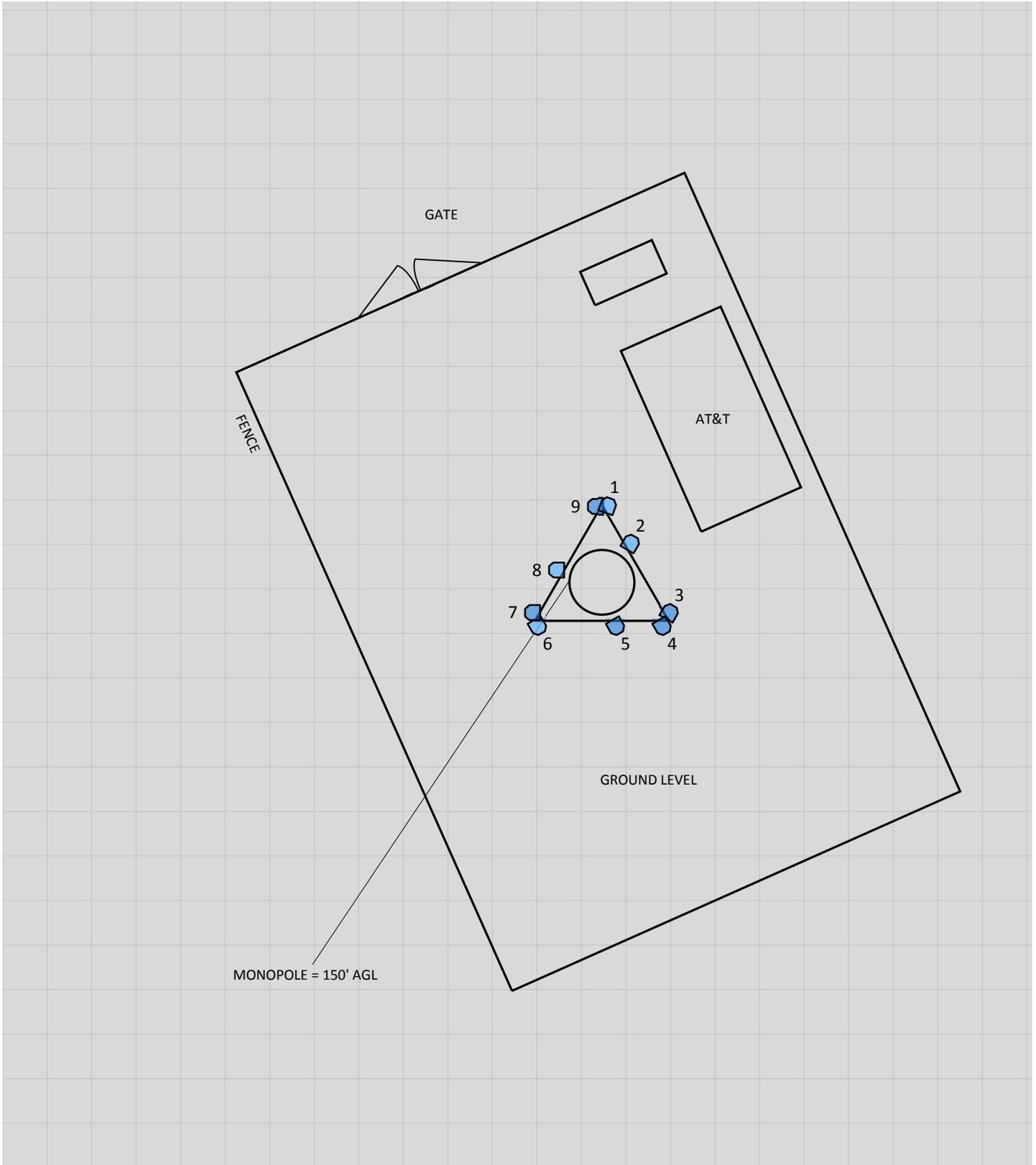
Note: The 2100MHz LTE technology is being added to an existing antenna.

4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas.

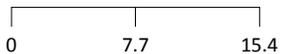
The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Woodbury Paper Mill Rd

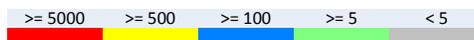


% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)



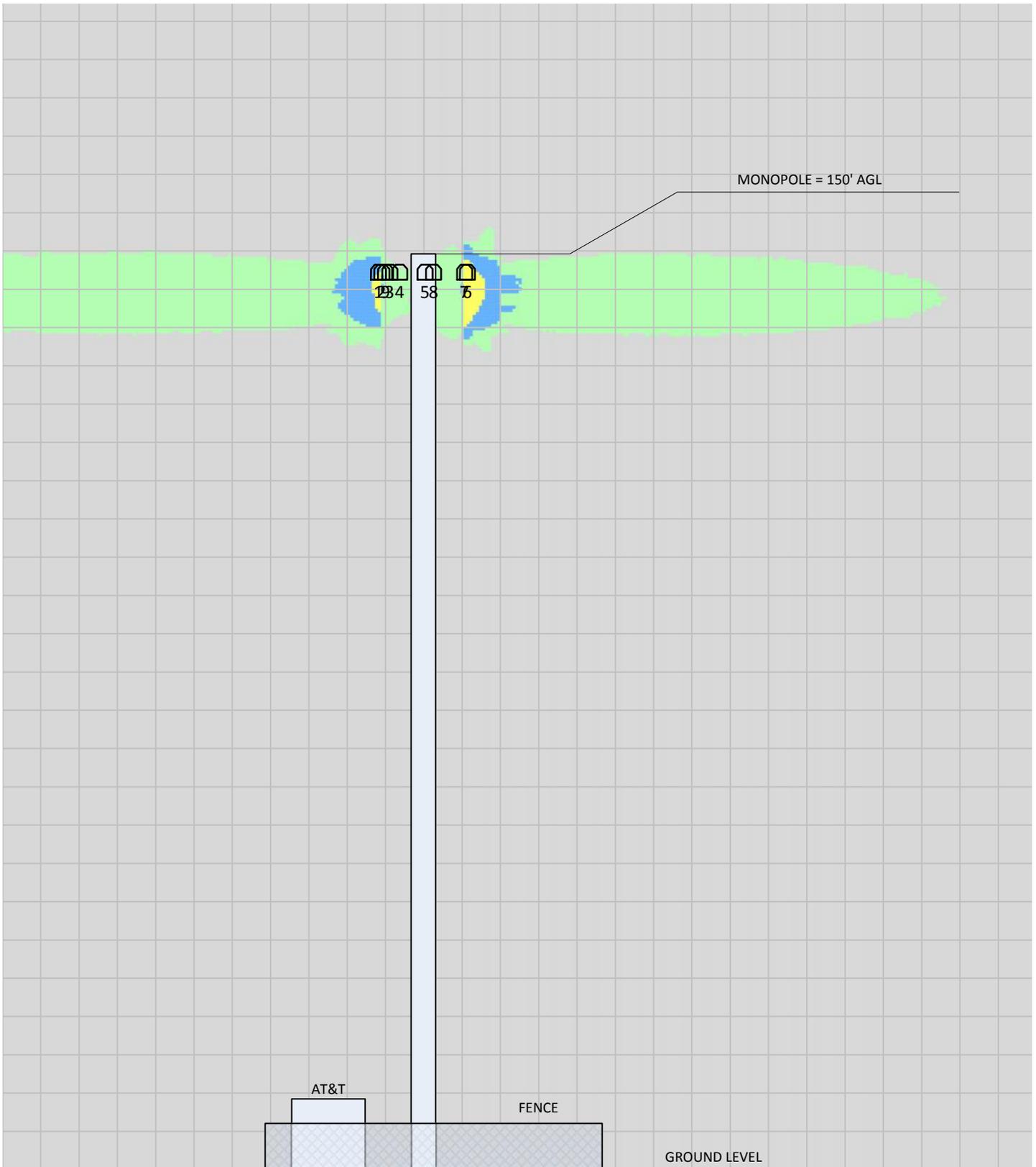
www.sitesafe.com
Site Name: Woodbury Paper Mill Rd
9/12/2016 1:27:22 PM



AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPICS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT
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SitesafeTC Version: 1.0.0.0 - 0.0.0.249
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Woodbury Paper Mill Rd Elevation View



MONOPOLE = 150' AGL

134
58
76

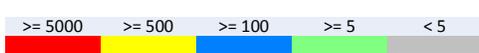
AT&T

FENCE

GROUND LEVEL

% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)
0 11.2 22.4
www.sitesafe.com
Site Name: Woodbury Paper Mill Rd
9/12/2016 1:32:38 PM



AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPICS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

SitesafeTC Version: 1.0.0.0 - 0.0.0.249
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Location

Information Sign 1 required at the Gate.

Yellow caution 2 sign required at the base of the Monopole.

6 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms that:

I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Sam Cosgrove.

September 12, 2016

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

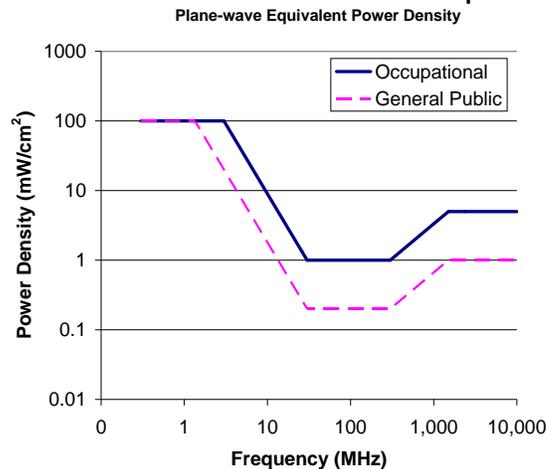
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. **Gray represents areas more than 20 times below the most conservative exposure limit.**
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, Inc.

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-ionising Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>