



November 6, 2006

Michael Perrone
Connecticut Siting Council
10 Franklin Square
New Britain Connecticut 06051

RECEIVED
NOV - 7 2006
CONNECTICUT
SITING COUNCIL

Re: Antenna Site FCC RF Compliance Assessment and Report
Address: CT 0046 Mohawk Mountain Road, Cornwall, CT.

Dear Mr Perrone:

Attached is the above mentioned RF measurement report for this site, If there should be any other questions on the RF density please call me at 860-742-7736.

Respectfully submitted for
Nextel Communications of the Mid-Atlantic, Inc.

A handwritten signature in cursive script, appearing to read "Marie R. Burbank".

By: Marie R. Burbank
Consultant

208 Gilead Road
Andover, CT 06232



PINNACLE TELECOM GROUP

Consulting and Engineering Services

ANTENNA SITE FCC RF COMPLIANCE ASSESSMENT AND REPORT

SPRINT

**CT72XC030A / CT0046
"MOHAWK MOUNTAIN"
MOHAWK MOUNTAIN ROAD
CORNWALL, CT**

NOVEMBER 6, 2006

14 RIDGEDALE AVENUE, SUITE 209 • CEDAR KNOLLS, NJ 07927 • 973-451-1630

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SUMMARY

At the request of Sprint, Pinnacle Telecom Group (PTG) has performed an independent assessment of compliance with FCC limits for maximum permissible exposure (MPE) for a proposed addition to an existing antenna operation on a freestanding lattice tower located on Mohawk Mountain Road in Cornwall, CT. Sprint refers to the site as "Mohawk Mountain", and identifies it with the code "CT72XC030A / CT0046". Sprint has existing antennas at the site, operating in the 851 MHz and 935 MHz frequency bands, and proposes to add a 1900 MHz antenna operation. The tower is collocated with antenna operations by Cingular Wireless and Alltel, as well as a dipole antenna, a ground-plane antenna, and four microwave dish antennas. In addition, there is another freestanding lattice tower within 500 feet of the subject site, populated with several antennas. This assessment will address the RF effects of all existing and proposed antennas at or in the vicinity of the subject site.

FCC regulations require an assessment and assurance of compliance with maximum permissible exposure (MPE) limits whenever technical modifications are made to a site, which includes the addition or modification of antennas. The assessment of compliance may involve on-site measurements, a mathematical analysis, or a combination of the two. The latter is being applied in this case. The mathematical analysis employs standard FCC formulas for calculating the RF effects of the antennas in a very conservative manner, intentionally overstating the potential exposure levels.

The reference we will use for the results in this case is the FCC's maximum permissible exposure (MPE) limits applicable to safe, continuous exposure of the general public (what the FCC terms the "general population"). Specifically, the results are reported here as a simple percentage of that FCC limit. Results below 100 percent indicate compliance with the FCC limit; results above 100 percent would indicate the MPE limit is exceeded.

The results of the on-site RF measurements of the existing antennas and the calculated RF level for the proposed Sprint operation to be added to the site are in the table on the next page.

Maximum On-Site RF Level Measurement	10.0% of the FCC limit
Maximum Calculated RF Level of Sprint's Proposed Antennas	0.8110 % of the FCC limit

Combining the highest measured RF level of the existing antennas with the "worst-case" (maximum) calculated RF level of the proposed Sprint antennas – a conservative assumption, as the two do not necessarily occur at the same location – results in a maximum level of 10.8110 percent of the FCC general population MPE limit, quite comfortably in compliance with the FCC regulations.

The remainder of this report provides the following:

- ❑ a description of the site and its existing antenna operations;
- ❑ the results of the on-site measurements;
- ❑ technical data on the proposed Sprint antenna operation at the site;
- ❑ analysis of the incremental effect of the proposed Sprint antennas, with descriptions of the applicable FCC mathematical models for calculating potential RF exposure levels in the different areas of interest, and application of the relevant technical data to those models;
- ❑ analysis of the results of the combination of on-site measurements and mathematical calculations against specified FCC limits for continuous human exposure to RF fields, and conclusions regarding compliance in each area of interest at the site.

In addition, four Appendices are included. Appendix A provides a site maps and photographs of the site. Appendix B provides a description of the measurement equipment and procedures. Appendix C provides background on the FCC limits for RF exposure. Appendix D provides a list of key FCC references on RF exposure and site compliance. Finally, Appendix E provides a summary of the expert qualifications of the individual certifying compliance for the subject site.

SITE DATA

The site is freestanding lattice tower, approximately 65 feet in height, which supports existing antenna operations by Sprint (in the 851 and 935 MHz frequency bands), Cingular Wireless, and Alltel, in addition to a dipole array antenna, a ground-plane antenna, and four microwave dish antennas, all operated by unidentified parties. Sprint's existing antennas are the omnidirectional (whip) type. Cingular and Alltel use directional panel antennas at the site.

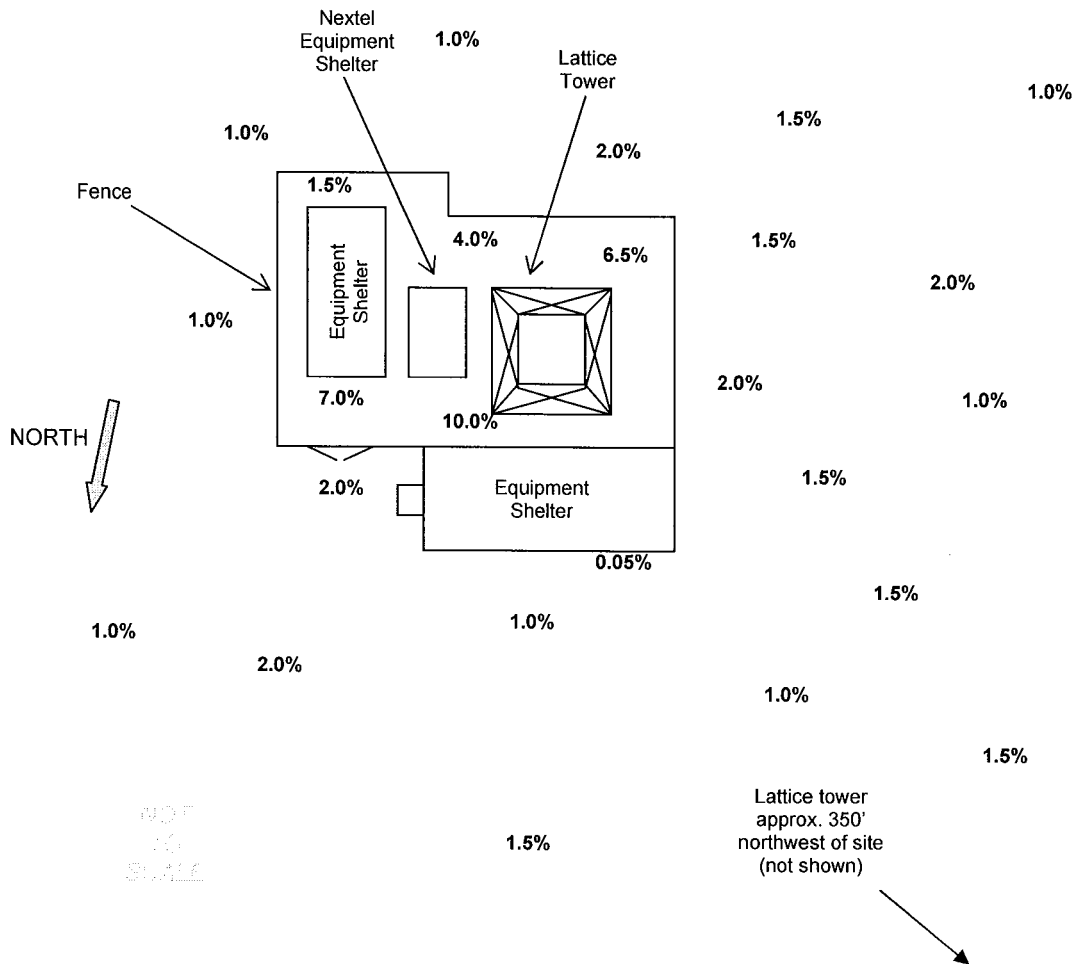
The site is enclosed by a chain link fence. RF alert signs have been posted on the fence and on one of the legs of the tower.

ON-SITE MEASUREMENTS OF EXISTING ANTENNAS

The results of the on-site ground-level measurements, expressed as a percentage of the FCC general population MPE limit, are overlaid on the plan view sketch on the next page. For clarity, the existing antennas are not shown.

As indicated, the maximum measurement at ground-level was 10.0 percent of the FCC general population MPE limit, measured inside the fenced-in compound near the northeast leg of the tower.

As a footnote, the maximum RF measurement outside the fence was 2.0 percent of the FCC general population MPE limit, measured in several locations.



INCREMENTAL EFFECT OF THE PROPOSED SPRINT ANTENNAS

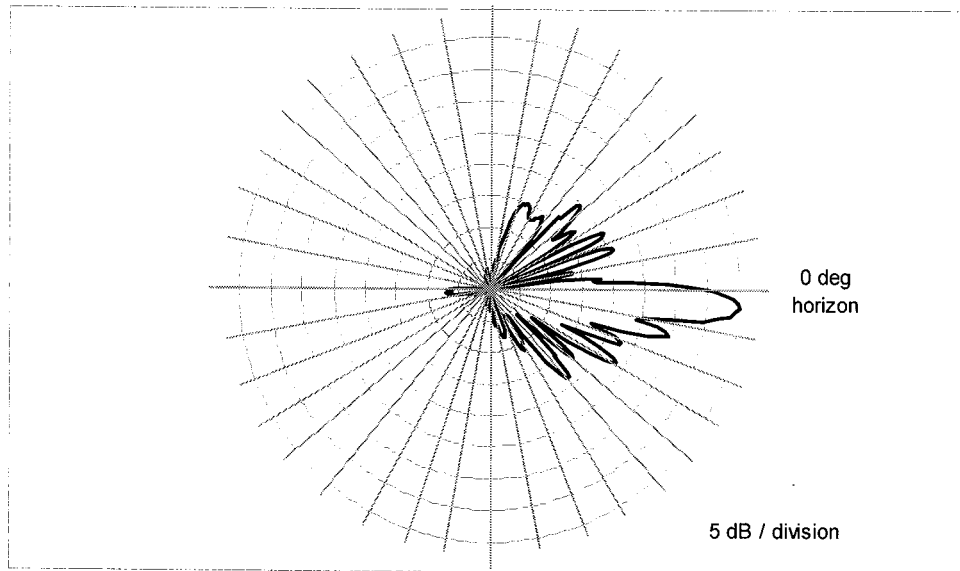
Sprint's proposed antennas would provide sectorized service coverage, arranged in three sectors of one antenna each. The Sector A azimuth is at 330 degrees, Sector B is at 80 degrees, and Sector C is at 200 degrees. The proposed antennas are 56 inches in length.

The table on the next page summarizes the other relevant antenna data for the proposed Sprint antenna operation.

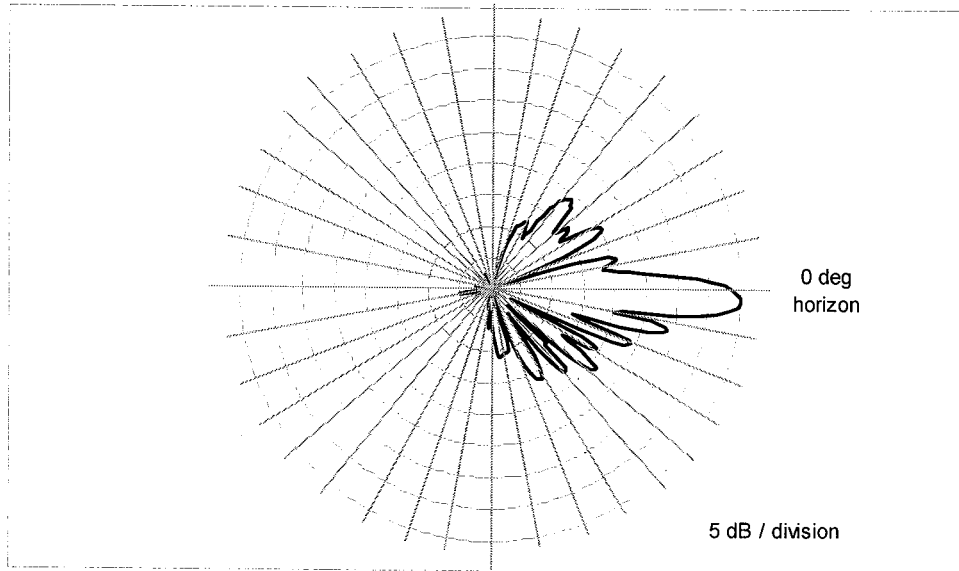
Technical Data – Sprint 1900 MHz	
Service Coverage Type	Sectorized – 3 sectors – A, B, & C, with antenna model differences noted below)
Antenna Type	Directional Panel
Antenna Manufacturer	EMS Wireless
Antenna Model	A & C: RR65-1804DPL2 B: RR65-1802DPL2
Maximum Antenna Gain	17.8 dBi
Antenna Height AGL	60 ft. 2 in. (to centerline)
RF Channels per Sector	6
Transmitter Power / RF Channel	16 watts
Line Loss	Conservatively ignored (assumed 0 dB)

The antenna vertical-plane pattern is key to the calculations of potential street-level exposure. Diagrams of the vertical-plane radiation patterns of the proposed Sprint antenna models are shown below and on the following pages.

EMS Wireless RR65-1804DPL2 – Vertical-plane Pattern



EMS Wireless RR65-1802DPL2 – Vertical-plane Pattern



FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate potential RF exposure levels at various points around transmitting antennas.

At street-level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the ground. Our calculations will assume a 100% "perfect" reflection, the worst-case approach.

The FCC formula for ground-level calculations for an antenna operation is shown on the following page.

$$\text{MPE\%} = (100 * \text{TxPower} * 10^{(\text{Gmax-Vdisc})/10} * 4) / (\text{MPE} * 4\pi * R^2)$$

where

- MPE% = RF level, expressed as a percentage of the FCC general population (“uncontrolled”) MPE limit
- 100 = factor to convert to a percentage
- TxPower = maximum power into antenna, milliwatts
- $10^{(\text{Gmax-Vdisc})/10}$ = numeric equivalent of the relative antenna gain in the downward direction of interest
- 4 = the factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
- MPE = FCC general population MPE limit
- R = straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations:

1. The proposed Sprint antennas are assumed to be operating continuously at maximum power, and we will ignore the power-attenuation effects of the antenna cabling (“antenna line loss”) for the proposed operation.
2. The directional antennas are all hypothetically assumed to be pointed directly overhead all points of interest at ground level, ignoring the effects of antenna discrimination in the horizontal plane.
3. The power-attenuation effects of shadowing or other obstructions to a visual line-of-sight path for the potential exposure are ignored.
4. The calculations intentionally minimize the distance factor (R) by performing the calculations from the bottom (rather than the centerline) of the antenna to a six-foot, six-inch human standing height at ground level.
5. The potential RF exposure at ground level is assumed to be 100-percent

enhanced (increased) via a “perfect” field reflection from the ground itself.

As noted earlier, Sprint proposes two different antennas at the site. In order to determine compliance, we will first calculate the RF level of each proposed Sprint antenna individually. Then we will compare the results of the calculations for the proposed antennas and select the “worse-case” result of the two antennas at each distance point. Lastly, we will select the overall “worst-case” calculated RF level of the proposed Sprint antennas and combine it with the highest measured on-site RF level to conservatively determine overall compliance.

The table below provides the results of the ground-level compliance calculations for the proposed Sprint antennas, with the overall worst-case effect highlighted in bold in the last column of the last table.

Ground Distance (ft)	RR65-1804DPL2 Sector A / C MPE%	RR65-1802DPL2 Sector B MPE%	Sprint “Worse-Case” MPE%
0	0.0121	0.0179	0.0179
20	0.0225	0.0247	0.0247
40	0.1339	0.0753	0.1339
60	0.0705	0.1543	0.1543
80	0.1765	0.0509	0.1765
100	0.1782	0.0709	0.1782
120	0.1352	0.1416	0.1416
140	0.1217	0.2066	0.2066
160	0.1179	0.0166	0.1179
180	0.3959	0.2227	0.3959
200	0.4096	0.3036	0.4096
220	0.3120	0.3049	0.3120
240	0.1787	0.2303	0.2303
260	0.0717	0.1163	0.1163
280	0.0764	0.0259	0.0764
300	0.2319	0.0292	0.2319
320	0.2045	0.0257	0.2045
340	0.4669	0.1316	0.4669
360	0.4175	0.1177	0.4175
380	0.6677	0.3052	0.6677
400	0.6036	0.2759	0.6036
420	0.8110	0.4887	0.8110
440	0.7399	0.4459	0.7399
460	0.6778	0.4084	0.6778
480	0.6231	0.3754	0.6231
500	0.7236	0.5364	0.7236

As indicated in bold, the calculated "worst-case" result for the proposed Sprint operation is only 0.8110 percent of the FCC general population MPE limit.

As noted earlier, the highest RF level measured on the ground around the site was 10.0 percent of the FCC general population limit. Combining the highest measured RF level of the existing antennas with the "worst-case" (maximum) calculated RF level of the proposed Sprint antennas – a conservative assumption, as the two do not necessarily occur at the same location – results in a maximum level of 10.8110 percent of the FCC general population MPE limit, quite comfortably in compliance with the FCC regulations.

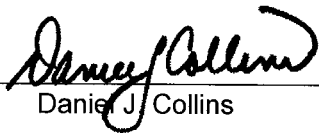
COMPLIANCE CONCLUSION

The results of the combination of measurements and calculations show that the Sprint "Mohawk Mountain" site, with the addition of the 1900 MHz antenna operation, is in compliance with the strictest FCC limit for the control of RF exposure.

CERTIFICATION

The undersigned hereby certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.



Daniel J. Collins

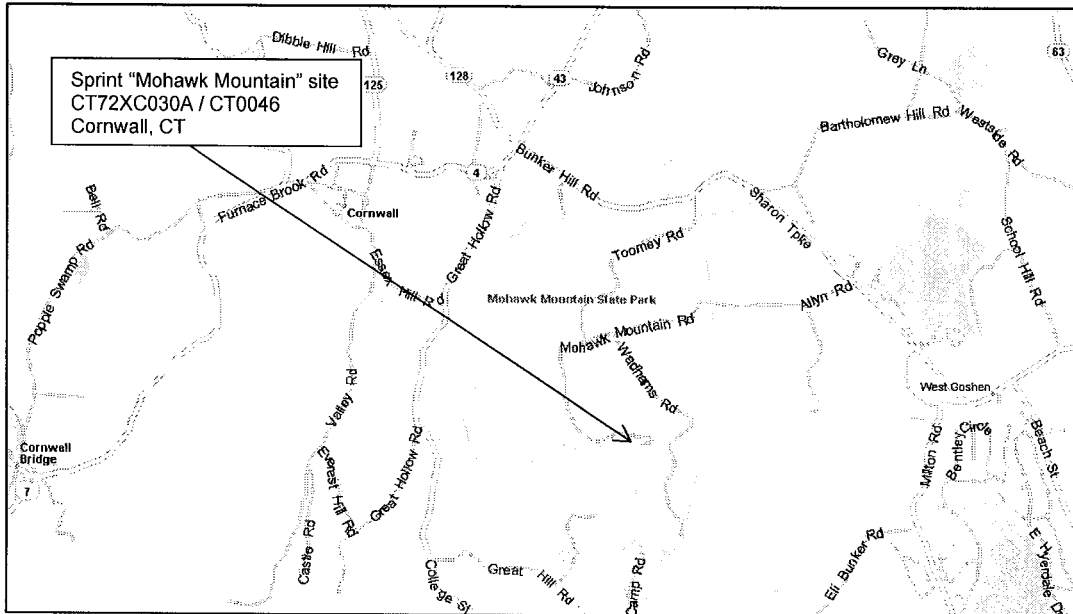
Chief Technical Officer
Pinnacle Telecom Group, LLC

11/6/06

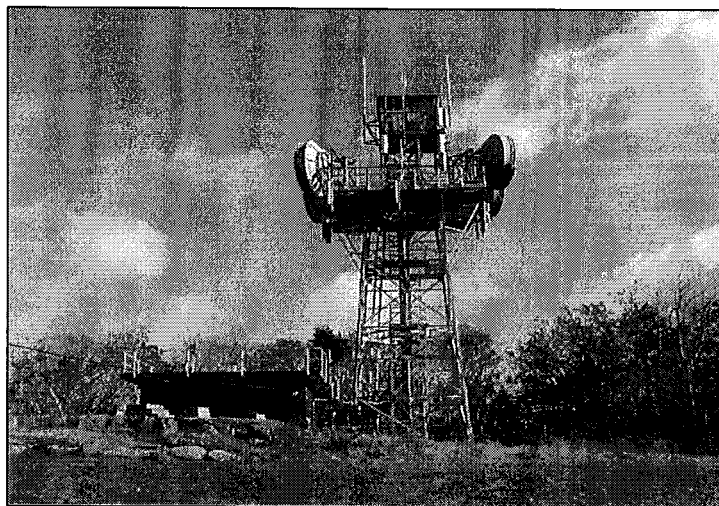
Date

Appendix A: SITE MAP AND PHOTOGRAPHS

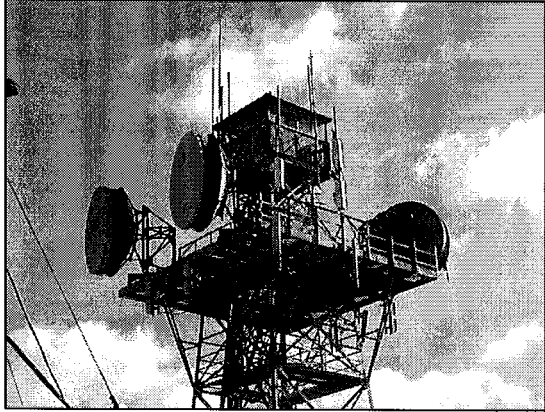
The Sprint "Mohawk Mountain" site is on Mohawk Mountain Road in Cornwall, CT, as illustrated on the map below.



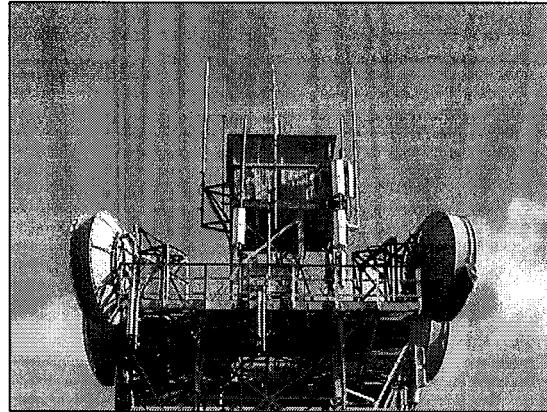
Photographs of the site, taken on the day of the measurements, are displayed below and on the following pages.



Looking east at entire tower and compound



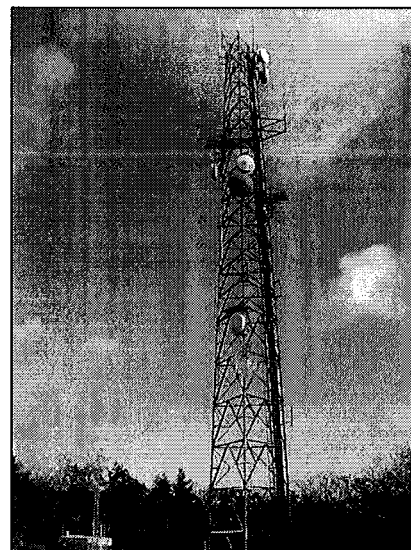
Detail of top of tower, facing southeast



Detail of top of tower, facing east



RF sign on fence



Nearby tower, northwest of site



Nextel shelter (left); RF sign on tower leg



American Tower Site I.D. sign on fence



FCC Tower Registration sign on fence

Appendix B: MEASUREMENT EQUIPMENT AND PROCEDURE

The RF exposure measurements were performed using a Narda model 8722 RF probe and Narda model 8715 RF meter. Both the probe and meter are capable of broadband RF measurements, covering a range of 300 kHz to 50 GHz. The measuring equipment is designed to automatically register all RF levels within the frequency range and report them as percentages of the FCC's overall occupational MPE limit. The equipment was calibrated by the manufacturer in September 2006.

The measurements were taken in a manner consistent with training provided by the equipment manufacturer, including the "RF Field Measurements for Antenna Sites" videotape, developed by Richard Tell Associates and now included as part of the Narda equipment package.

In order to ensure "safe-side" results, maximum RF spot-levels were measured and reported in all areas. No spatial-averaging was employed, and in accordance with guidance shared with us by the FCC staff, sufficient time was spent performing measurements the site to gather a "real-world" depiction of RF levels.

Appendix C: BACKGROUND ON THE FCC RF EXPOSURE LIMITS

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Health and Safety Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

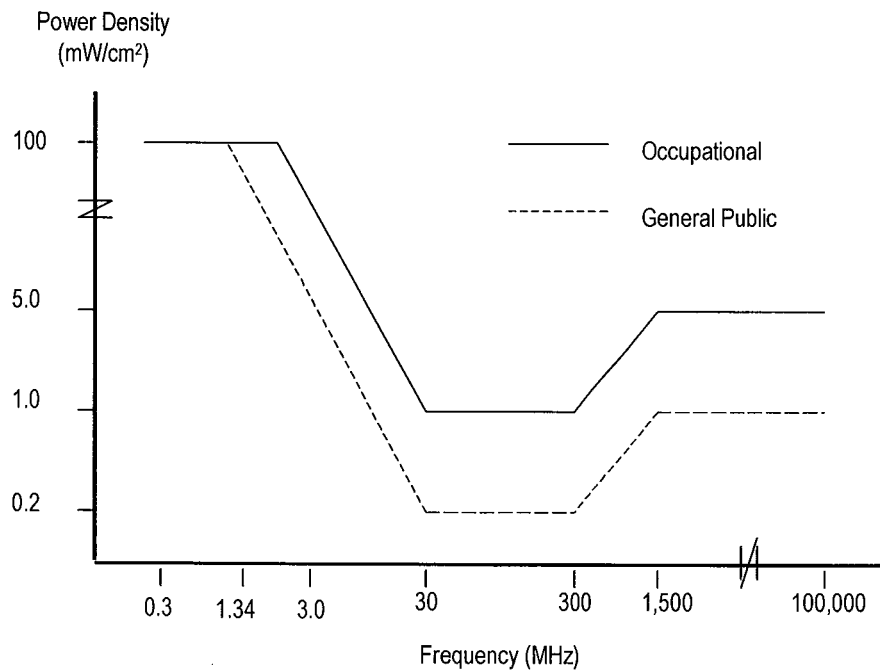
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. Continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects on humans.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm²). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm² reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm ²)	General Public Exposure (mW/cm ²)
0.3 - 1.34	100	100
1.34 - 3.0	100	180 / F ²
3.0 - 30	900 / F ²	180 / F ²
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the

MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Appendix D: FCC REFERENCES

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

47 CFR, FCC Rules and Regulations, Part 22 (Public Mobile Services).

47 CFR, FCC Rules and Regulations, Part 24 (Personal Communications Services).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

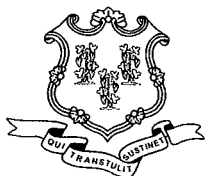
"RF Field Measurements for Antenna Sites", (video), Richard Tell Associates Inc., 1997.

"EME Awareness for Antenna Site Safety", (video), Motorola (produced in association with Richard Tell Associates Inc.), 1997.

Appendix E: EXPERT QUALIFICATIONS

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	<ul style="list-style-type: none"> • 34 years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 10,000 antenna sites since the new FCC rules went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,000 times since 1997 • Have been accepted as an expert in New Jersey, New York, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	<ul style="list-style-type: none"> • B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	<ul style="list-style-type: none"> • Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	<ul style="list-style-type: none"> • Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore, Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Director – Spectrum Management Policy and Practice, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	<ul style="list-style-type: none"> • Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models later adopted by the FCC for predicting RF exposure • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	<ul style="list-style-type: none"> • Author, Microwave System Engineering (AT&T, 1974) • Co-author and executive editor, A Guide to New Technologies and Services (Bellcore, 1993) • National Spectrum Managers Association (NSMA) – former three-term President and Chairman of the Board of Directors; earlier was founding member, twice-elected Vice President, served as a long-time member of the Board, and was named an NSMA Fellow in 1991 • Listed in Who's Who in the Media and Communication and International Who's Who in Information Technology • Published more than 35 articles in industry magazines



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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Daniel F. Caruso
Chairman

November 15, 2006

Marie R. Burbank
Consultant
208 Gilead Road
Andover, CT 06232

RE: **EM-SPRINT-NEXTEL-031-061018** - Sprint/Nextel Communications of the Mid-Atlantic, Inc. notice of intent to modify an existing telecommunications facility located at Mohawk Mountain, Cornwall, Connecticut.

Dear Ms. Burbank:

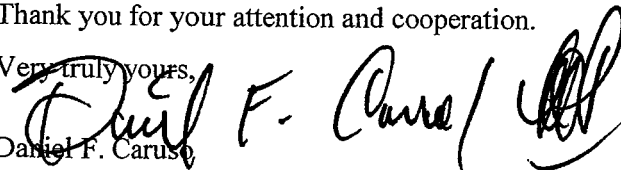
At a public meeting held on November 14, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated October 18, 2006 and additional information dated October 18, 2006 and November 6, 2006, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,


Daniel F. Caruso
Chairman

DFC/MP/laf

c: The Honorable Gordon M. Ridgway, First Selectman, Town of Cornwall
Karl Nilsen, Zoning Enforcement Officer, Town of Cornwall
David Vivian, Site Development Manager, National Grid Wireless, Inc.
Michele G. Briggs, New Cingular Wireless PCS, LLC
Christopher B. Fisher, Esq., Cuddy & Feder, LLP

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CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

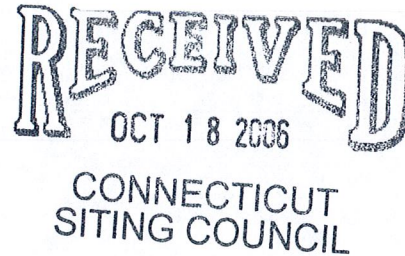
ORIGINAL



EM-SPRINT/NEXTEL-031-061018

October 18, 2006

David Caruso
Chairperson
Connecticut Siting Council
10 Franklin Square
New Britain Connecticut 06051



Re: Notice of Exempt Modification
Address: Mohawk Mountain, Cornwall, CT.

Dear Mr. Caruso:

Please be advised that National Grid Wireless, Inc. as agent for Sprint/Nextel Communication of Mid-Atlantic, Inc. submits the following application to modify an existing site at Mohawk Mountain, Cornwall, CT. Sprint/Nextel is planning to add three antennas to the tower at a RAD center of 65' and add six coax runs to these three new antennas.

Discussion:

The Mohawk Mountain site consists of Ranger Station tower within a site compound surrounded by a chain link fence. The coordinates at the site are latitude: 41.821.47, longitude: 73.297.

Sprint/Nextel plans to add three antennas at a RAD center of 67' and add six (6) 7/8" coax runs to these new antennas. The three (3) existing antennas will remain at the top of the tower at 75'. Please note that the existing antennas are listed in the CSC database under the pre-merger designation "Nextel" as three (3) whips, model # ASPD950. Actually these should read three (3) antennas, model # DB844H90(E)- XY.

The planned modification to this site is within the activities explicitly provided for in R.C.S.A. 16-50j-72(b)(2).


1. The proposed modification will not increase the height of the tower and will not extend the boundaries of the existing compound area. The enclosed tower drawings confirm that the planned changes will not increase the overall height of the tower or change the dimensions of the compound.

208 Gilead Road
Andover, CT 06232

2. The installation of Nextel equipment, as reflected on the attached site plan, will not require an extension of the site boundaries. The equipment will be located entirely within the existing compound.
3. The proposed modification to the facility will not increase the noise levels at the existing facility by six decibels or more.
4. There will be no additional antennas to increase the total radio frequency power density, measured at the site boundary, to a level at or above the applicable standard.

For the foregoing reasons, Nextel respectfully submits that the proposed addition modification at the Mohawk Mountain facility constitutes an exempt modification under R.C.S.A. 16-50j-72(b)(2).

Respectfully submitted for
National Grid Wireless, Inc. as agent for Sprint/Nextel Communications of Mid-Atlantic, Inc.



By: Marie R. Burbank
Agent

Attachments

Cc: Gordon Ridgway, First Selectman

Cornwall, CT0046 (Mohawk Mountain Rd, Cornwall) - CT Siting Council Power Density Calculations

Sprint Nextel Directional Antennas ESMR - 851 MHz - CDMA 1962 MHz 83' AGL

Transmitters:		Frequency	CT Standard	Number of	ERP (W)	Centerline of	Power density	% of CT Standard
		In MHz	mW/cm ²	Channels	per channel	Tx antennas AGL (ft.)	calculated at base of tower	
Cingular (from Cingular's file)	TDMA	880	0.5867	16	100	65	0.1362	23.2000%
	GSM	880	0.5867	2	296	65	0.0504	8.6000%
	GSM	1930	1.0000	2	427	65	0.0727	7.3000%
Sprint Nextel	IDEN	851	0.5673	12	100	77	0.072740766	12.8215%
	CDMA	1962	1.0000	11	411	77	0.274050835	27.4051%
Total % of CT Standard								79.3266%

** lowest Sprint Nextel antenna centerline is 83' adjusted to 77' per OET 65 Bulletin for 6' average head height.

Note: Power densities are in mW/cm²

RR65-18-XXDPL2

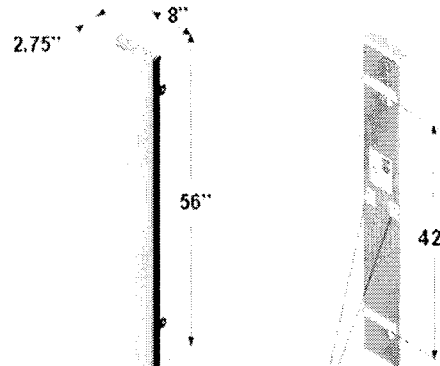
DualPol® Polarization

1850 MHz - 1990 MHz

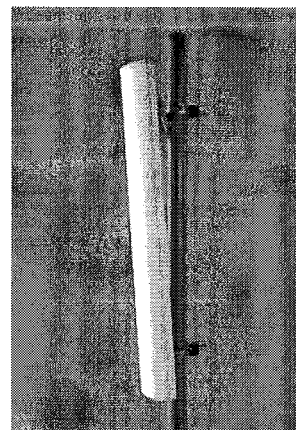
OptiRange™
Suppressor™

Electrical Specifications

Azimuth Beamwidth (-3 dB)	65°
Elevation Beamwidth(-3 dB)	6°
Elevation Sidelobes (Upper)	≥ 18 dB
Gain	17.8 dBi (15.7 dBd)
Polarization	Dual Linear Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	> 34 dB
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	2; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20 W (+ 43 dBm)]
Lightning Protection	Chassis Ground



RF
CONNECTORS



Mechanical Specifications

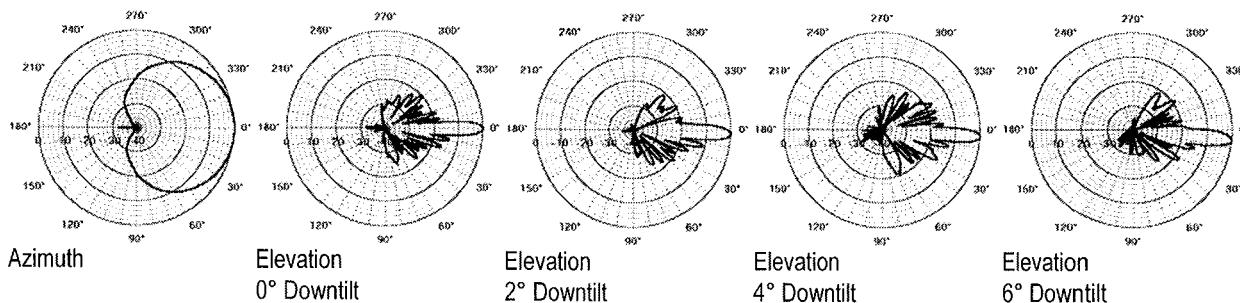
Dimensions (L x W x D)	56 in x 8 in x 2.75 in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft ² (.29 m ²)
Front Wind Load @ 100 mph (161 kph)	92 lbs (409 N)
Side Wind Load @ 100 mph (161 kph)	31 lbs (139 N)
Weight (Without Mounting Kit)	13.5 lbs (6.2 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.

Patterns



EMS' antennas are protected by one or more of the following U.S. patents: 5,844,529; 6,067,053; 6,462,710; 6,392,600; 6,069,590; 5,966,102; 5,757,246. EMS' antenna designs may also be covered by pending U.S. patent applications and by pending & awarded international patents.

Revised 04/21/04



DB809KE-XT

Omni Antenna

DECIBEL®
Base Station Antennas

- Omnidirectional coverage
- Rugged, durable construction, heavy duty radome for minimum tip deflection
- Lightning resistant, with large diameter conductor extending top to bottom
- Invert mountable

ELECTRICAL

Frequency (MHz) :	806 - 869
Polarization :	Vertical
Gain (dBd/dBi) :	9/11.1
Azimuth BW (Deg.):	360
Elevation BW (Deg.):	8
Beam Tilt (Deg.):	0
VSWR :	<1.5:1
Max. Input Power (Watts) :	500
Impedance (Ohms) :	50
Lightning Protection :	DC Ground

MECHANICAL

Weight :	12.2 kg (27 lb)
Dimensions (LxOD) :	3,734 x 76 mm (147 x 3 in)
Max. Wind Area :	0.14 m ² (1.5 ft ²)
Max. Wind Load (@ 100 mph) :	364.7 N (82 lbf)
Max. Wind Speed :	362 km/h (225 mph)
Hardware Material :	Galvanized Steel
Connector Type :	7-16 DIN - Female (1, Bottom)
Color :	Horizon Blue
Standard Mounting Hardware :	DB5091-3

Andrew Corporation
2601 Telecom Parkway
Richardson, Texas U.S.A 75082-3521
Tel: 214.631.0310

Fax: 214.631.4706
Toll Free Tel: 1.800.676.5342
Fax: 1.800.229.4706
www.andrew.com

* - Indicates Typical
7/14/2005
dbtech@andrew.com

Information correct at date of issue but may be subject to change without notice.



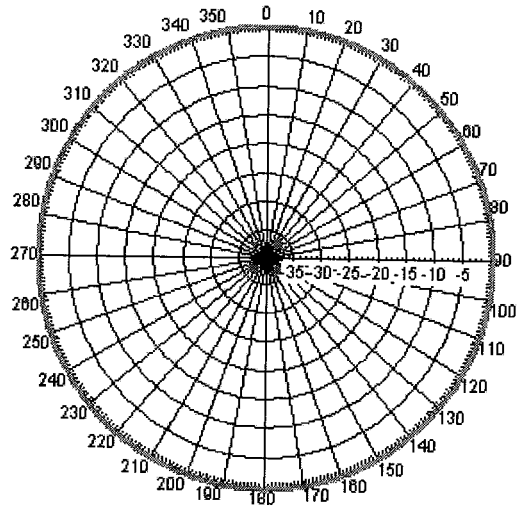
DB809KE-XT

Omni Antenna

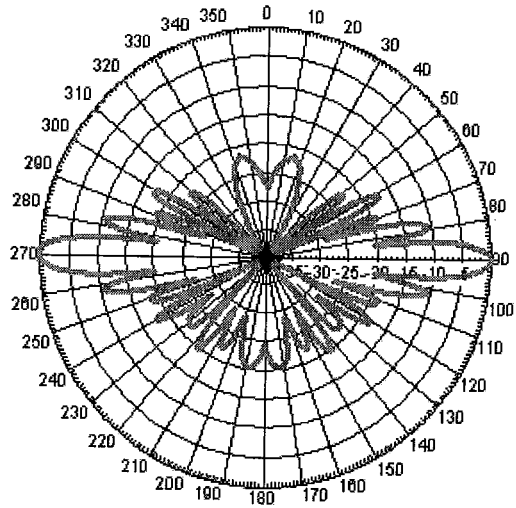
DECIBEL
Base Station Antennas

AZIMUTH PATTERN

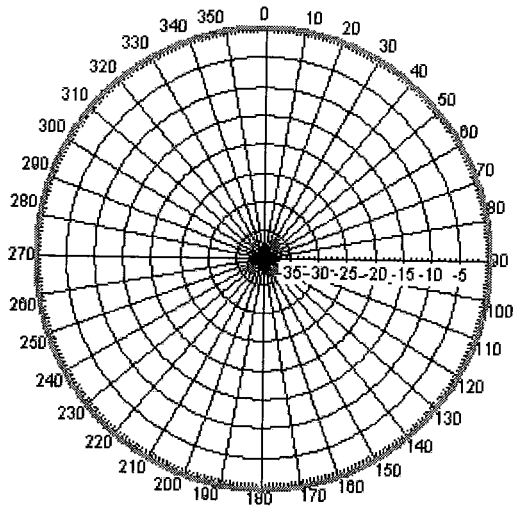
ELEVATION PATTERN



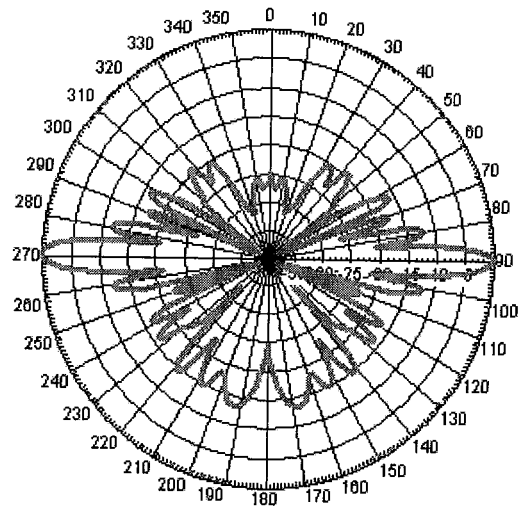
Freq: 815 MHz, Tilt: 0



Freq: 815 MHz, Tilt: 0



Freq: 860 MHz, Tilt: 0



Freq: 860 MHz, Tilt: 0

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dbtech@andrew.com

Information correct at date of issue but may be subject to change without notice.



AMERICAN TOWER

Structural Analysis Report

Structure : Existing 65' Lattice Steel Tower
Site Name : Cornwall ,CT
ATC Site Number : 88009
Proposed Carrier : Nextel
Carrier Site Name : Cornwall
Carrier Site Number : CT0046
County : Litchfield
Eng. Number : 26472221
Date : September 19, 2006



100 Regency Forest Drive, Suite 400
Cary, North Carolina 27511
Phone: (919) 468-0112
Fax: (919) 466-5416



Mr. William Garrett, P.E.
American Tower Corporation
100 Regency Forest Drive, Suite 400
Cary, NC 27511

September 15, 2006

Re: Structural Review of American Tower Corporation's Existing 65-ft Lattice Steel Tower
American Tower Site Name: Cornwall, CT; ATC Site No. 88009; ATC Services Eng. No. 26472221
Nextel Communications Site Name: Cornwall; Nextel Communications Site No. CT0046
Located: At Mohawk Mtn. on Mattatuck Trail Rd. in Litchfield County; Lat N 41° 49' 21", Long. W 73° 17' 52"

Dear Mr. Garrett,

Communication Structures Engineering, Inc. (CSEI) has completed a structural review of the existing 65-ft self supported tower located at this American Tower Corporation (ATC) site known as Cornwall, CT. In accordance with ATC's request, CSEI performed a structural analysis of this tower to check its capability to support the existing tower, antenna and equipment loads as well as the new loads from the **Nextel Communications** proposed antenna and transmission line additions. The specific loading criteria that we utilized were those prescribed by the "2003 International Building Code" and "ANSI/TIA/EIA-222-F", "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." In accordance with the above Standards the wind speed that we utilized for the analysis of this structure was the "3 second gust wind speed" of 100-mph (equivalent to a "fastest-mile wind speed" of 80-mph) specified for Litchfield County, CT. A description of the existing tower, the applicable design criteria, our structural analysis procedure, and a description of the results of CSEI's structural analysis follow:

EXISTING TOWER INFORMATION & HISTORY

The 65-ft custom designed tower at this site was originally built by AT&T Long Lines in 1953 to support four KS5759 Delay Lens Antennas. This tower was a custom designed structure engineered by Rose Chulkoff & Rose Engineering. In addition to the AT&T antennas, it was designed to support a Fire Warden Cab (Fire Lookout Station) on the upper platform and an access stair instead of the usual climbing ladder. This tower structure has been modified several times since 1953. In 1978 & 1983 the tower was modified by Rose Chulkoff & Rose to replace the Delay Lens Antennas with the four current 10-ft diameter parabolic antennas. ATC purchased this tower from AT&T Corp. on 2/28/00. The Fire Warden's Cab and AT&T's four parabolic antennas are still located at the top of this tower.

CSEI utilized the original 1953 tower design, as well as later tower modification drawings to conduct our structural review of this tower. The tower "Loading & Specifics" equipment list, provided to us by ATC, was utilized to determine the existing & proposed Nextel Communications antenna & cable requirements. A site visit or condition survey of this tower was not a part of CSEI's scope of work for this location. We have assumed that the tower has been maintained in good physical condition.

DESIGN CRITERIA

See the attached page for the applicable Design Criteria and Antenna Configuration that were used for our structural analysis.

STRUCTURAL ANALYSIS PROCEDURE

The referenced design criteria combined with wind tunnel test data from tests conducted on AT&T towers, and antenna platforms were utilized to determine the applicable loads for this structure. A structural frame analysis was performed by applying these loads to a computer model of the tower framing that was modeled on STAAD III software. The load carrying frame members of this structure were then reviewed to check their compliance with the AISC ASD "Specification for Structural Steel Buildings".

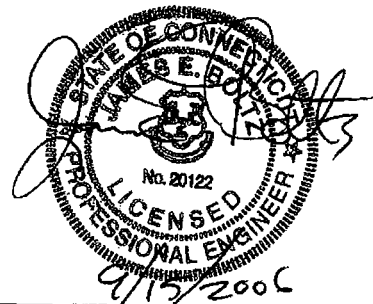
RESULTS OF STRUCTURAL ANALYSIS

Our analysis determined that all of the existing tower members had maximum stress levels that were less than the allowable stresses permitted by the AISC Specification. The tower foundation was also found to comply with the requirements of "ANSI/TIA/EIA-222-F". We have therefore concluded that this existing tower will be capable of supporting the existing loads as well as the proposed Nextel Communications additions in compliance with "2003 International Building Code" & "ANSI/TIA/EIA-222-F" design criteria. This tower will not require any structural modifications or changes to support the listed equipment provided all customer's antenna & cable mounts (Includes all existing & proposed mounts) are properly engineered & installed by the firms responsible for that work scope.

If any co-location customers add any future additional antennas or equipment to this tower, this structure should be re-analyzed at that time. CSEI would be happy to respond to any questions regarding this structural analysis.

Sincerely,

James E. Boltz, P.E. (CT P.E. # 20122)



- Attachments: 1.) Design Criteria for ATC Tower #88009 at Cornwall, CT
- 2.) Structural Calculations for ATC Tower at Cornwall, CT



Mr. William Garrett, P.E.
American Tower Corporation
100 Regency Forest Drive, Suite 400
Cary, NC 27511

September 15, 2006

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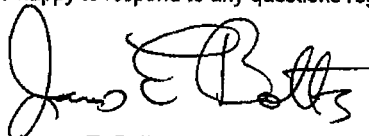
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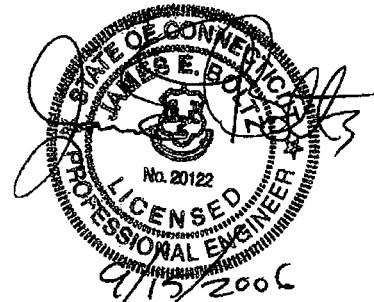
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- 2.) Structural Calculations for ATC Tower at Cornwall, CT

September 15, 2006

DESIGN CRITERIA

American Tower Site: CORNWALL, CT

ATC Site No. 88009

LOCATED: At Mohawk Mtn. on Mattatuck Trail Rd. In Litchfield, CT, Litchfield County
Latitude N 41° 49' 21" / Longitude W 73° 17' 52"

DESIGN STANDARDS

**2003 INTERNATIONAL BUILDING CODE, 100 MPH (3 Second Gust Wind Speed)
ANSI/TIA/EIA-222-F, 80 MPH (Fastest Mile Wind Speed)**

In addition to the loads from the existing tower framing and platforms the loads from the following antennas and their associated transmission lines were considered in the analysis.

ANTENNA CONFIGURATION (Used for Structural Analysis)

Existing Antennas - To Remain on Tower

- 1.) (Nextel Communications) Three ASP-950 Omni Antennas at centerline of 75'-0" above tower base plate and three associated runs of 0.875 inch diameter coaxial cable.
- 2.) (Cingular Wireless) Nine CSS DU01417-8670 Panel Antennas at centerline of 65'-0" above tower base plate and nine associated runs of 1.25 inch diameter coaxial cable.
- 3.) (Cingular Wireless) Six Tower Top Amplifiers at 65'-0" above tower base plate.
- 4.) (Cingular Wireless) Three Dplxers at 65'-0" above tower base plate.
- 5.) (AT&T Corporation) Four 10-ft diameter Shielded Parabolic Antennas at centerline of 57'-0" above tower base plate and four associated EW63 elliptical waveguide runs.
- 6.) (Alltel (Newco)) Two Decibel DB731DG85V1EXM Panel Antennas at centerline of 48'-0" above tower base plate and eight associated runs of 1.625 inch diameter coaxial cable.
- 7.) (Alltel (Newco)) One Allgon 7262 Panel Antenna at centerline of 48'-0" above tower base plate and four associated runs of 0.875 inch diameter coaxial cable.
- 8.) (Alltel (Newco)) One Allgon 7391 Panel Antenna at centerline of 48'-0" above tower base plate and four associated runs of 0.875 inch diameter coaxial cable.

Existing Equipment - To Remain on Tower

- (Fire Warden) Existing 10-ft x 10-ft x 9'-3" tall Fire Warden Cab with stair access.

New (Proposed) Antennas and Equipment- To Be Added on Tower

- (Nextel Communications) Three EMS RR65-18-04DPL2 Panel Antennas at centerline of 70'-0" above tower base plate and six associated runs of 0.875 inch diameter coaxial cable.

Customer Antenna & Cable Mounts and Their Connections to Tower

The loads stated above include the applicable overall tower dead and wind loads from the listed customer antennas and transmission lines that were provided to CSEI. CSEI's structural analysis applies these loads at the tower truss panel points (joints where tower braces connect) that are closest to the customer equipment location. CSEI's structural analysis of this overall tower structure does not include tower stresses that could occur from improper customer equipment attachments that may locally stress individual tower braces. The attachment of the individual customer's equipment is not a part of CSEI's scope of work. CSEI assumes that these attachments, in accordance with good engineering practice, will be designed and installed to properly connect close to the tower panel points in such a manner as to not introduce significant local stresses to the existing tower bracing members. Improperly connected customer equipment can significantly stress individual tower members and consequently reduce the overall load capacity of the entire tower structure.

The design and installation of all customers' antenna & cable mounts and their proper connections to this tower are the responsibility of the individual customers and their engineers, suppliers & contractors.





COMMUNICATION STRUCTURES ENGINEERING, INC.
5579-B Chamblee Dunwoody Rd. /Suite 517
Dunwoody, GA 30338 (770) 951-8080

STRUCTURAL CALCULATIONS

FOR

65-ft SELF-SUPPORTED TOWER

Cornwall, CT

ATC SITE #88009

LITCHFIELD COUNTY, CT

Issue Date: September 15, 2006



TABLE OF CONTENTS

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Design Criteria	1
Tower Load Calculations.....	2 TO 5
Computer Model	6
Member Capacity Checks	7 TO 9
Foundation Load Comparison.....	10

DESIGN CRITERIA
American Tower Site: CORNWALL, CT
ATC Site No. 88009

LOCATED: At Mohawk Mtn. on Mattatuck Trail Rd. In Litchfield, CT, Litchfield County
Latitude N 41° 49' 21" / Longitude W 73° 17' 52"

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2003 INTERNATIONAL BUILDING CODE, 100 MPH (3 Second Gust Wind Speed)
ANSI/TIA/EIA-222-F, 80 MPH (Fastest Mile Wind Speed)

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- 4.) (Cingular Wireless) Three Diplexers at 65'-0" above tower base plate.
- 5.) (AT&T Corporation) Four 10-ft diameter Shielded Parabolic Antennas at centerline of 57'-0" above tower base plate and four associated EW63 elliptical waveguide runs.
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CORNWALL, CT

SHEET NO. 2
JOB NO. _____
BY _____

ARBA NET & ARBA GROSS

01-0" LEVEL (501-0" AUL)

ARBA GROSS

2597

ARBA NET

747

251-0" LEVEL (251-0" AUL)

ARBA GROSS

4077

ARBA NET

757



CORNWALL, CT

SHEET NO. 3
JOB NO.
BY

DISCRETE ADJUSTMENTS

- 1) FIRE WAGON CAB = 218.4^{ft} Co AC
- 2) THREE NORTON OMNI ANT'S & MOUNTS = 30^{ft} Co AC
- 3) NINE CIRCULAR PANEL ANT'S & MOUNTS = 120^{ft} Co AC
- 4) CIRCULAR TT'S & DIPOLES = 9^{ft} Co AC
- 5) THREE PROPOSED EMS / RR65-18-04DPLZ ANT'S & MOUNTS = 40^{ft} Co AC
- 6) FRAMING BELOW = 68.0^{ft} Co AC

485.4^{ft} Co AC

$$KZ = \left(\frac{65}{33}\right)^{(2.17)} = 1.21, \quad qz = 0.00256 (80)^2 (1.21) = 19.82 \text{ PSF}$$

$$P = \frac{19.82 (485.4)}{1000 \times 4} = \boxed{2.41 \text{ K} / \text{SF}}$$

0'-0" LEVEL (50'-0" AUL)

- 1) FOUR 10'-0" PARABOLIC ANTENNAS = 377^{ft} Co AC
- 2) TWO DECIBEL TRIDIRECTIONAL ANT'S & MOUNTS = 22.6^{ft} Co AC
- 3) TWO ALLWON PANEL ANT'S & MOUNTS = 20.0^{ft} Co AC

419.6^{ft} Co AC



CORNWALL, CT

SHEET NO. 4

JOB NO.

BY

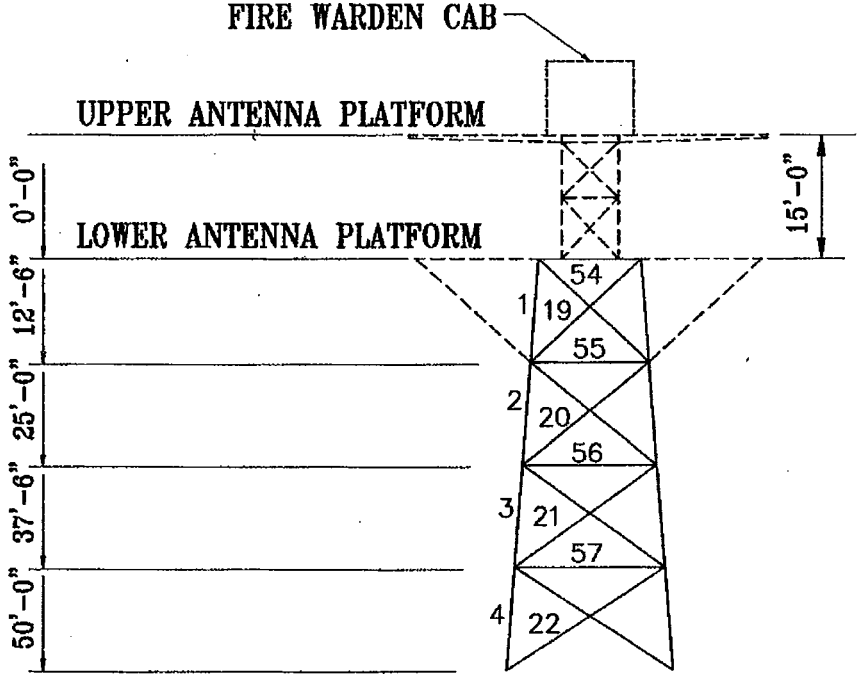
LINEAR APPURTENANCES

- 1) STAIRS = 99' CaAa
 - 2) NINE NEXTOL 7/8" ϕ COAK = $9(27.5') \left(\frac{1.09''}{12} \right) (1.2) = 26.98' \text{ CaAa}$
 - 3) NINE CIRCULAR 1-1/4" ϕ COAK = $9(27.5') \left(\frac{1.55''}{12} \right) (1.2) = 38.36' \text{ CaAa}$
 - 4) FOUR ELLIPTICAL W-4 = $4(19.5') \left(\frac{2.25''}{12} \right) (1.2) = 17.55' \text{ CaAa}$
 - 5) ALLTEL (NEWLO) COAK = $8(12.5') \left(\frac{2''}{12} \right) (1.2) = 20.0' \text{ CaAa}$
 - 6) ALLTEL (NEWLO) COAK = $8(12.5') \left(\frac{1.09''}{12} \right) (1.2) = 10.9' \text{ CaAa}$
- 212.79' CaAa**

25'-0" LEVEL (25'-0" AUL)

- 1) STAIRS = 90' CaAa
 - 2) NEXTOL COAK = $9(25') \left(\frac{1.09''}{12} \right) (1.2) = 24.58' \text{ CaAa}$
 - 3) CIRCULAR COAK = $9(25') \left(\frac{1.55''}{12} \right) (1.2) = 34.88' \text{ CaAa}$
 - 4) FOUR ELLIPTICAL W-4 = $4(25') \left(\frac{2.25''}{12} \right) (1.2) = 22.5' \text{ CaAa}$
 - 5) ALLTEL (NEWLO) COAK = $8(25') \left(\frac{2''}{12} \right) (1.2) = 40.0' \text{ CaAa}$
 - 6) ALLTEL (NEWLO) COAK = $8(25') \left(\frac{1.09''}{12} \right) (1.2) = 21.8' \text{ CaAa}$
- 233.71' CaAa**

65-FT SELF SUPPORTED TOWER
WITH FIRE WARDEN CAB
ANALYSIS MODEL FOR
CORNWALL, CT



MEMBER CAPACITY CHECK FOR CORNWALL, CT

ALL LOADS ARE IN KIPS., $F_y = 36 \text{ ksi}$, DESIGN LOAD = MEMBER LOAD X 0.75 (TO ALLOW FOR 1/3 INCREASE IN STRESSES)

DIAGONAL MEMBERS

MEMBER TYPE	MEMBER SIZE	AREA SQ. IN.	Lx FEET	Ly FEET	Lz FEET	rx	ry	rz	kl/r	Fa	MEMBER CAPACITY	MEMBER LOAD	DESIGN LOAD	DL/MC
19	L 3 1/2 X 3 1/2 X 1/4	1.69	9.09	12.85	9.09	1.09	1.090	0.694	142.86	7.32	12.37	11.15	8.36	0.68
20	L 3 1/2 X 3 X 1/4	1.56	10.39	14.67	10.39	1.11	0.914	0.631	167.72	5.31	8.28	8.95	6.71	0.81
21	L 4 X 3 X 1/4	1.69	11.1	15.77	11.10	0.90	1.280	0.651	172.03	5.05	8.53	10.23	7.67	0.90
22	L 4 X 3 X 1/4	1.69	10.73	16.93	10.73	0.90	1.280	0.651	167.84	5.30	8.96	9.09	6.82	0.76

FOUNDATION LOAD COMPARISON

COMPARISON OF FOUNDATION REACTIONS FROM PRESENT ANALYSIS WITH FOUNDATION REACTIONS FROM ORIGINAL TOWER DESIGN.

PRESENT CSEI ANALYSIS

MAXIMUM UPLIFT ON FOUNDATION = 55.83 KIPS

MAXIMUM DOWN LOAD ON FOUNDATION = 90.23 KIPS

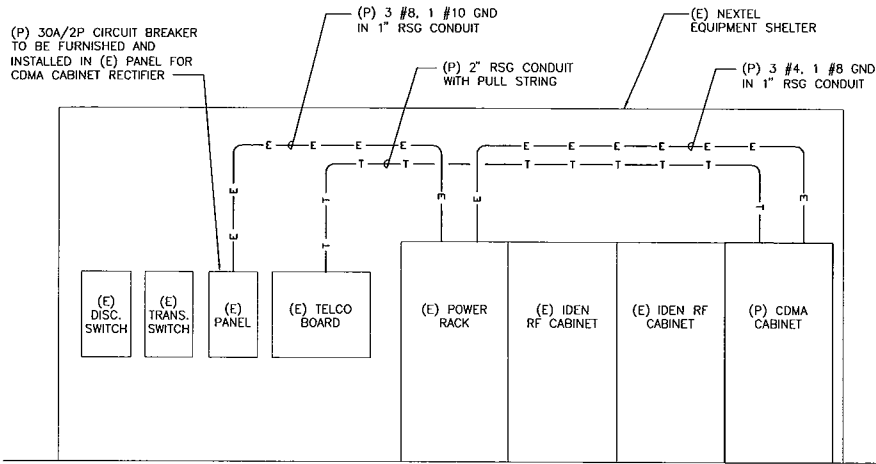
ORIGINAL TOWER DESIGN

MAXIMUM UPLIFT ON FOUNDATION = 60.0 KIPS

MAXIMUM DOWN LOAD ON FOUNDATION = 113.9 KIPS

CONCLUSION

ASSUMING THE ORIGINAL FOUNDATION WAS DESIGNED PROPERLY, FOUNDATION WILL BE ADEQUATE FOR CURRENT LOADS.



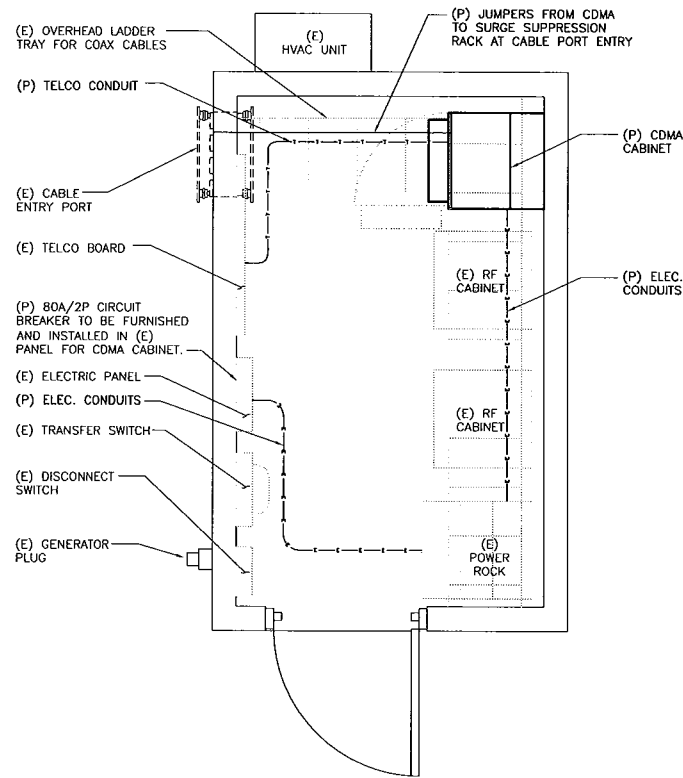
POWER/TELCO RISER DIAGRAM 1

SCALE: N.T.S.

1

RISER DIAGRAM NOTES:

1. ELECTRICAL AND TELEPHONE UTILITY SERVICES ARE EXISTING.
2. ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.
3. CONTRACTOR SHALL COORDINATE POWER REQUIREMENTS FOR THE (P) CDMA CABINET WITH SPRINT. DESIGN IS BASED ON 48VDC LUCENT MOD 4.0 INDOOR CABINET.
4. GROUNDING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND DRAWING E-2.
5. NEW CIRCUIT BREAKER(S) SHALL MATCH EXISTING FOR TYPE, MANUFACTURER, VOLTAGE, AND AIC RATING.



POWER/TELCO PLAN 2

SCALE: 3/4" = 1'-0"

2

ELECTRICAL LEGEND

SYMBOLS

—○—	CONDUIT TURNING UP
—●—	CONDUIT TURNING DOWN
-----	CONDUIT RUN UNDERGROUND
-----	CONDUIT RUN ABOVE GROUND
Ⓜ	METER ON METER/BREAKER UNIT
⊗	5/8" x 10'-0" COPPER CLAD GROUND ROD
⊗	GROUND WELL
■	EXOTHERMIC TYPE CONNECTION
●	COMPRESSION TYPE CONNECTION
—G—G—	GROUND RING, #2 AWG SOLID TINNED BARE COPPER GROUND CONDUCTOR 6" BELOW FROST LINE AND 24" OFF CONCRETE PLATFORM
Ⓧ	REPRESENTS DETAIL NUMBER
Ⓧ	REF. DRAWING NUMBER

ABBREVIATIONS

ACCA	ANTENNA CABLE COVER ASSEMBLY
AGB	COPPER ANTENNA GROUND BAR
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BTS	BASE TRANSMISSION SYSTEM
CIBGE	COAX ISOLATED GROUND BAR EXTERNAL
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GR	GROWTH
IGR	INTERIOR GROUND RING (HALO)
LAGB	LOWER ANTENNA COPPER GROUND BAR
MIGB	MASTER ISOLATED GROUND BAR
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
PRC	PRIMARY RADIO CABINET
RGS	RIGID GALVANIZED STEEL
RWY	RACEWAY
TYP	TYPICAL
SSLP	SPRINT SPECTRUM LIMITED PARTNERSHIP
UAGB	UPPER ANTENNA COPPER GROUND BAR

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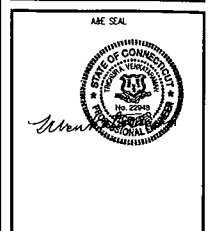
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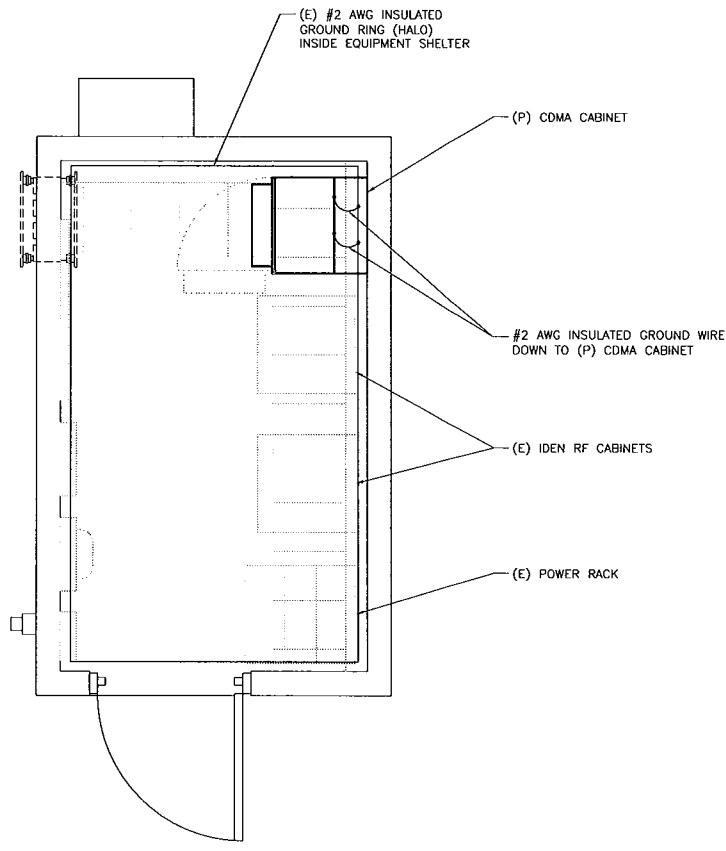
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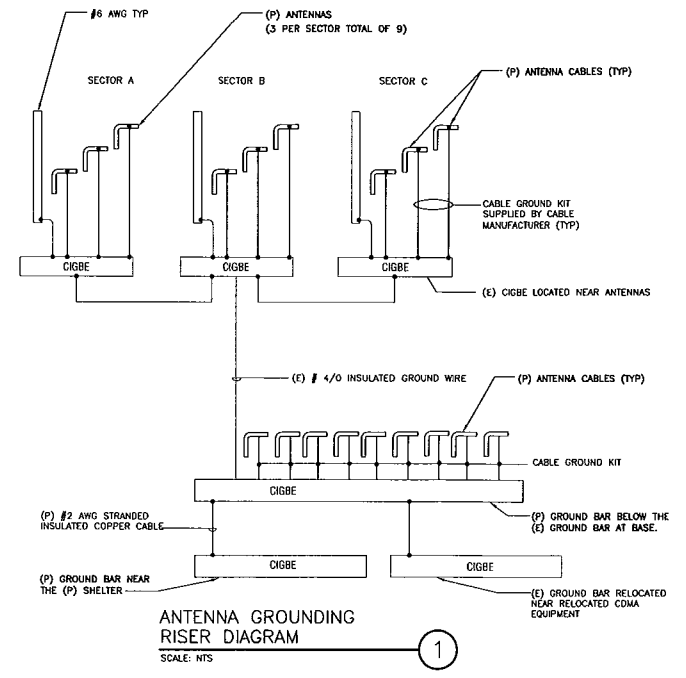
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SHEET TITLE
POWER/TELCO
RISER
DIAGRAM

SHEET NUMBER
E-1



GROUNDING PLAN
SCALE: 3/4" = 1'-0"
2



GROUNDING NOTES:

1. ALL INSTALLATIONS TO BE FIELD VERIFIED.
2. ALL GROUND WIRE SHALL BE BARE COPPER #2 AWG UNLESS OTHERWISE NOTED.
3. ALL GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
4. CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
5. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MIGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS AND EQUIPMENT CABINET SUPPORT FRAME SHALL HAVE (2) CONNECTIONS AS SHOWN.
6. ANTENNA GROUND KITS SHALL BE FURNISHED BY SPRINT AND INSTALLED BY ELECTRICAL CONTRACTOR.
7. REFER TO DRAWING E-1 FOR FURTHER GROUNDING REQUIREMENTS.
8. ALL METAL CONDUIT SHALL BE PROVIDED WITH BONDING BUSHINGS AND GROUNDED AT BOTH ENDS.
9. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
10. ALL UNDERGROUND CONNECTIONS SHALL BE EXOTHERMIC.
11. ALL EXOTHERMIC CONNECTIONS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
12. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE A MINIMUM OF 3/8" DIAMETER AND SHALL BE STAINLESS STEEL.
13. GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
14. PLASTIC CLIPS OR METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
15. STANDARD BUS BARS (CIGBE AND MIGB) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
16. THE GROUNDING CONNECTION TO THE POWER AND TELCO SECTIONS OF THE PPC CABINET SHALL BE MADE BY CONNECTING A CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED GROUND BUS BAR IN EACH COMPARTMENT.
17. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE (TYPICAL FOR THREE MOUNTING PIPES PER SECTOR).

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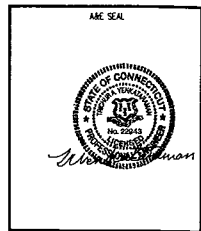
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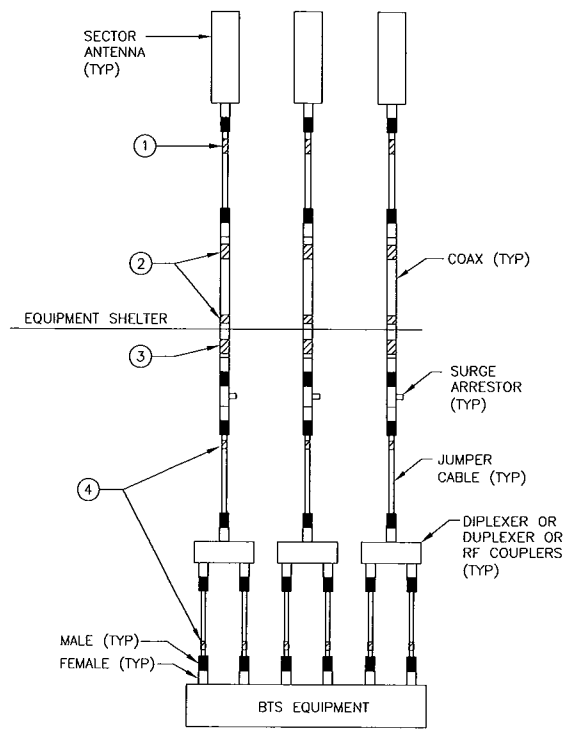
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SHEET TITLE
GROUNDING
RISER
DIAGRAM

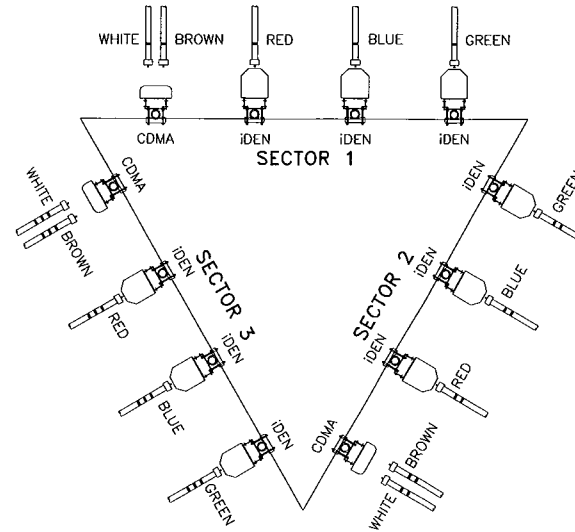
SHEET NUMBER
E-2



CABLE MARKING LOCATIONS DIAGRAM

ALL RF CABLE SHALL BE MARKED AS PER CABLE MARKING LOCATIONS TABLE BELOW:

CABLE MARKING LOCATIONS TABLE	
NO.	LOCATIONS
1.	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF BANDS.
2.	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 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 BANDS ON EACH END OF THE BOTTOM JUMPER.
5.	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF BANDS ON EACH END OF THE BOTTOM JUMPER.



TOWER PLAN VIEW

NOTE:
SECTOR ORIENTATION/AZIMUTH WILL VARY FROM REGION TO REGION AND IS SITE SPECIFIC. REFER TO RF REPORT FOR EACH SPECIFIC SITE TO DETERMINE THE SECTOR ORIENTATION.

ANTENNA SECTOR AND CABLE DEFINITION



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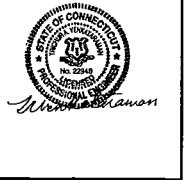
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SHEET TITLE
STANDARD
ANTENNA MARKING
DETAILS

SHEET NUMBER
E-3

IDEN ANTENNA & EBTS SPECIFICATIONS:						
	Alpha		Beta		Gamma	
	Before	After	Before	After	Before	After
Site Configuration	Omni					
Orientation (degrees)	0	0				
Coaxial Cable Line Length (feet)	83'	83'				
Number of Coaxial Cable Runs (quantity)	3	3				
Coaxial Cable Manufacturer & Size	CommScope (7/8") CR 50 1070 PE	CommScope (7/8") CR 50 1070 PE				
Number of Cross Band Coupled Cables	0	0				
Antenna Height (Rad Center)	83	83				
Number of Antennas (quantity)	3	3				
Number of TX Paths	3	3				
Antenna Manufacturer	Decibel	Decibel				
Antenna Model #	DB809KE-XT	DB809KE-XT				
Antenna Gain (dBi)	11.2	11.2				
Tx Design ERP (Watts / dBm)	50W	50W				
Mechanical Tilt (degrees)	0	0				
Electrical Tilt (degrees)	0	0				
RFDS	Duplex V06	Duplex V06				
Combiner Type 1	Hybrid3	Hybrid3				
Combiner Type 2	Hybrid3	Hybrid3				
Combiner Type 3	Hybrid3	Hybrid3				
Combiner Type 4						
# of 800MHz Quad(s) / Carriers Enbl	1 / 4	1 / 4				
# of 900MHz Quad(s) / Carriers Enbl	0	0				
# of Legacy BR	2	2				
Type of Legacy BR PA (70W / 40W)	40W	40W				
# of T1's	1	1				
GPS Location	On shelter	On shelter				
TTA/LNA	N/A	N/A				

CDMA ANTENNA & EBTS SPECIFICATIONS:						
	Alpha		Beta		Gamma	
	Before	After	Before	After	Before	After
Orientation (degrees)		330		80		200
Coaxial Cable Line Length (feet)		100'		100'		100'
Number of Coaxial Cable Runs (quantity)		2		2		2
Coaxial Cable Manufacturer		Andrew		Andrew		Andrew
Coaxial Cable Size		7/8		7/8		7/8
Cross Band Coupler (Manufacture, Model)		NA		NA		NA
Other Unique Combiner, Splitter, Connector (type, insertion loss dB)		NA		NA		NA
Number of Cross Band Coupled Coaxial Cables		NA		NA		NA
Antenna Height (Rad Center)		83'		83'		83'
Number of Antennas (quantity)		1		1		1
Antenna Manufacturer		EMS Wireless		EMS Wireless		EMS Wireless
Antenna Model #		RR65-18-04DPL2		RR65-18-02DPL2		RR65-18-04DPL2
Antenna Gain (dBi)		17.8		17.8		17.8
Tx Design ERP (Watts, dBm)		326.6 W, 55.14 dBm		326.6 W, 55.14 dBm		326.6 W, 55.14 dBm
Estimate Forward Link Path Lost in dB (BTS to Antenna)		2.2 dB		2.2 dB		2.2 dB
Estimate Reverse Link Path Lost in dB (Antenna to BTS)		2.2 dB		2.2 dB		2.2 dB
Mechanical Tilt (degrees)		0		0		0
Electrical Tilt (degrees)		4		2		4
# of Carriers 1xRTT		1		1		1
# of Carriers EVDO						
Reoccurring Special Event Carrier Count (1xRTT, EVDO)		No		No		No
Mercury (Yes / No)		No		No		No
Type of Forward link Mercury Equipment						
Type of Reverse link Mercury Equipment						
TTA/LNA (Type)						

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SHEET TITLE

RF SCHEDULE

SHEET NUMBER

E-4



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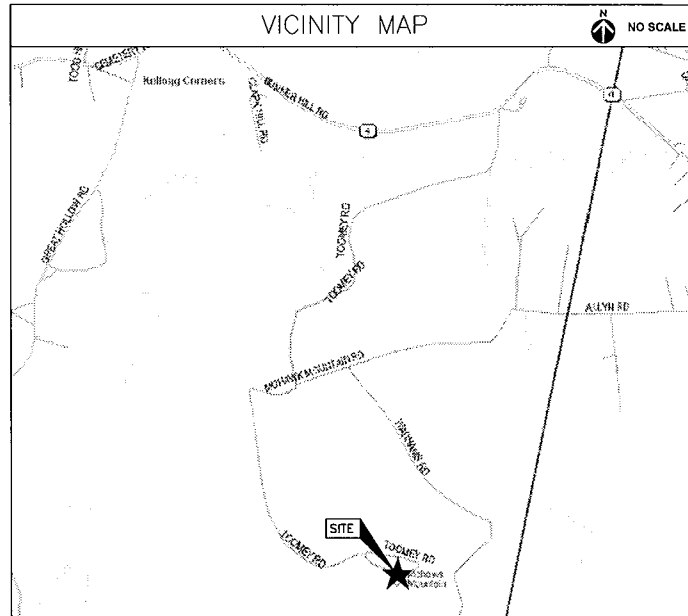
PROJECT SUMMARY	
SITE NUMBER:	CT0046/CT72XC030
SITE NAME:	MOHAWK MOUNTAIN
SITE ADDRESS:	MOHAWK STATE FOREST MOHAWK, CT 06759
COUNTY:	LITCHFIELD
LATITUDE:	41.82147
LONGITUDE:	-73.297
GOVERNING CODE:	STATE BUILDING CODE OF THE STATE OF CONNECTICUT
APPLICANT:	NATIONAL GRID WIRELESS 80 CENTRAL STREET BOXBOROUGH, MA 01719
C.M.:	ERIC WUNK (585) 255-0315
ARCHITECT:	BAY STATE DESIGN ASSOC., INC. ONE INTERNATIONAL BLVD, SUITE 400 MAHWAH, NJ 07495 (201) 512-8785
STRUCTURAL ENGINEER:	BAY STATE DESIGN ASSOC., INC. ONE INTERNATIONAL BLVD, SUITE 400 MAHWAH, NJ 07495 (201) 512-8785

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PROJECT DESCRIPTION

THREE (3) CDMA DUAL POLE ANTENNAS WILL BE ADDED TO THE TOWER, HAVING A RAD CENTER OF 60'-2". SIX (6) 3/8" COAX RUNS WILL BE ADDED AND WILL RUN TO THE THREE (3) PROPOSED CDMA ANTENNAS. ONE (1) CDMA EQUIPMENT CABINET WILL BE ADDED IN EXISTING SHELTER.



DRIVING DIRECTIONS

FROM THE NATIONAL GRID WIRELESS OFFICE:
START OUT GOING NORTH ON CENTRAL STREET TOWARD NEWTOWN ROAD. MERGE ONTO MA-2 W TOWARD I-495/AYER/FITCHBURG. MERGE ONTO I-495 S VIA EXIT 40 A TOWARD MARLBORO/WORCESTER. MERGE ONTO I-90 W/MASS PIKE VIA EXIT 22 TOWARD SPRINGFIELD/ALBANY. MERGE ONTO I-84 W VIA EXIT 9 TOWARD US-20/STURBRIDGE/HARTFORD, PORTIONS TOLL CROSSING INTO CONNECTICUT. MERGE ONTO CT-4 W/FARMINGTON AVE VIA EXIT 39 TOWARD FARMINGTON. TURN SLIGHT RIGHT ONTO MAIN ST/CT-4. TURN LEFT ONTO SPIELMAN HWY/CT-4. TURN RIGHT ONTO BIRGE PARK ROAD/CT-4. CONTINUE TO FOLLOW CT-4. TURN SLIGHT RIGHT ONTO NEW HARWINTON RD/CT-4. TURN LEFT ONTO US-202/E MAIN ST. TURN SLIGHT RIGHT ONTO E ELM ST/CT-4. TURN LEFT ONTO ALLYN RD. ALLYN ROAD BECOMES MOHAWK MOUNTAIN RD.

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
A-1	SITE PLAN AND EQUIPMENT SHELTER PLAN	0
A-2	ELEVATION & ANTENNA DETAILS	0
E-1	POWER/TELCO RISER DIAGRAM	0
E-2	GROUNDING RISER DIAGRAM	0
E-3	ANTENNA MARKING DETAILS	0
E-4	RF SCHEDULE	0

APPROVALS

OWNER _____ DATE _____

R.F. ENGINEER _____ DATE _____

SITE DEVELOPMENT _____ DATE _____

THE ABOVE PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO CURRENT COMPANY SPECIFICATIONS OUTLINED IN CONTRACT AND BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES OR MODIFICATIONS THEY MAY IMPOSE. REFER TO SPRINT STANDARD CONSTRUCTION SPECIFICATIONS. IN CASE OF A CONFLICT, SPRINT STANDARD CONSTRUCTION SPECIFICATIONS (LATEST EDITION) SHALL BE FOLLOWED.

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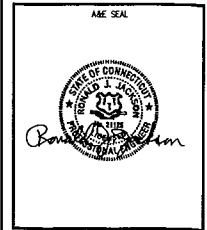
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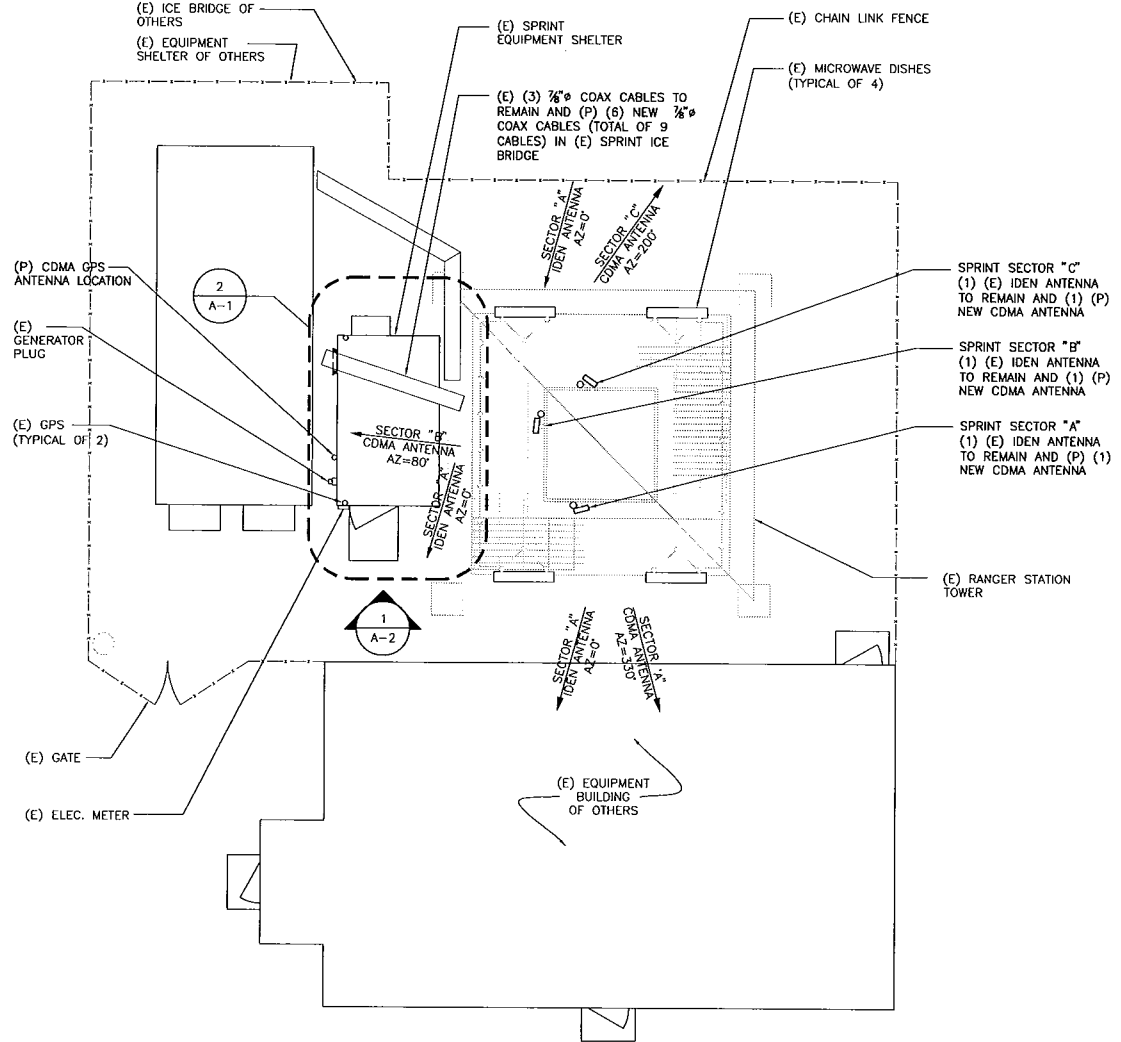
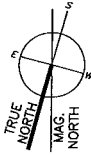
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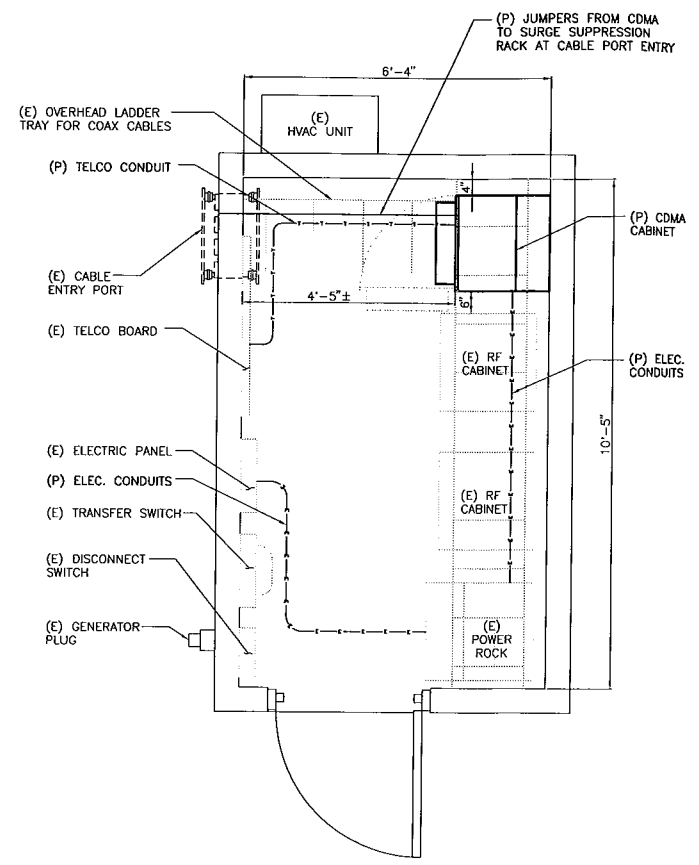
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SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



SITE PLAN
 SCALE: 1/4" = 1'-0"
 2 0 1 2 4 8



SHELTER PLAN
 SCALE: 3/4" = 1'-0"
 1 0 1 2 4



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SHEET TITLE
 SITE PLAN AND
 EQUIP. SHELTER PLAN

SHEET NUMBER
 A-1

(P) PROPOSED
 (E) EXISTING

PROJECT NO: 2747.008

DRAWN BY: TAV

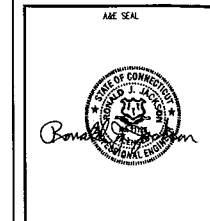
CHECKED BY: SM

CAD FILE: CT0046_CD_A-2

SUBMITTALS

0 09/12/06 FOR CONSTRUCTION

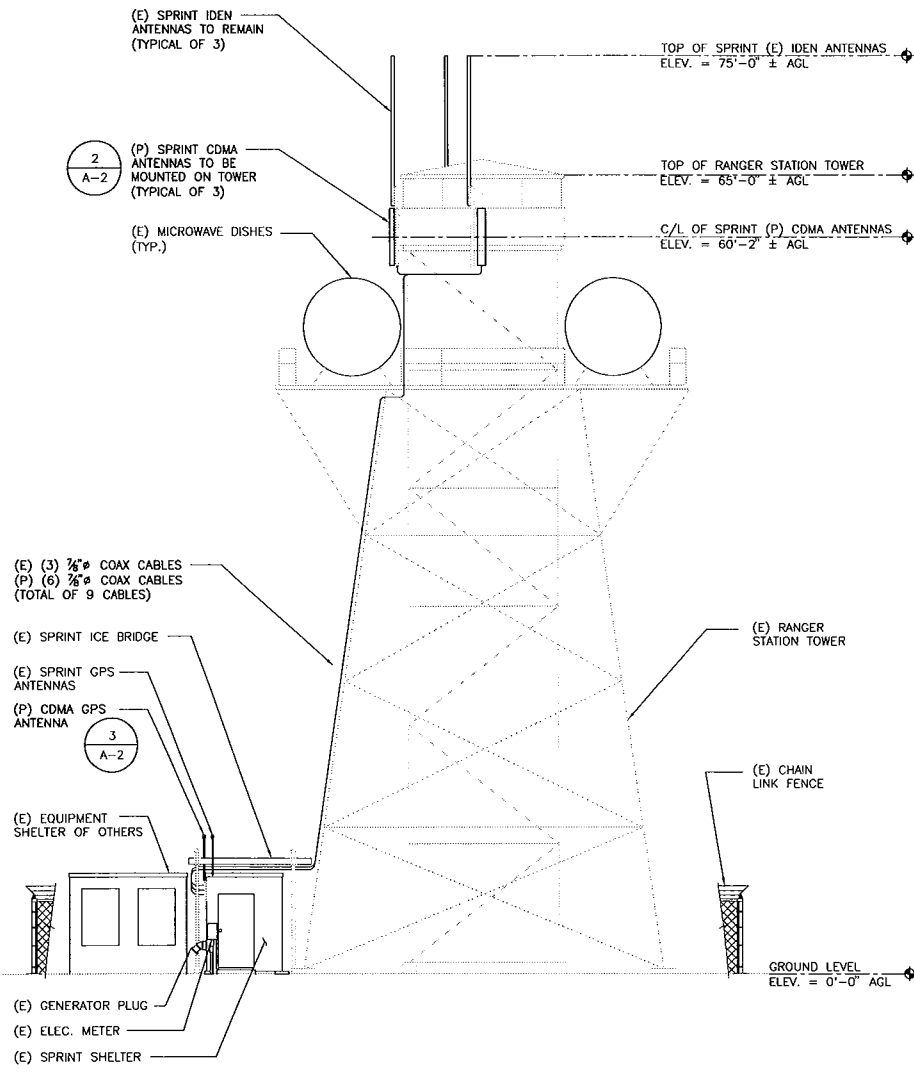
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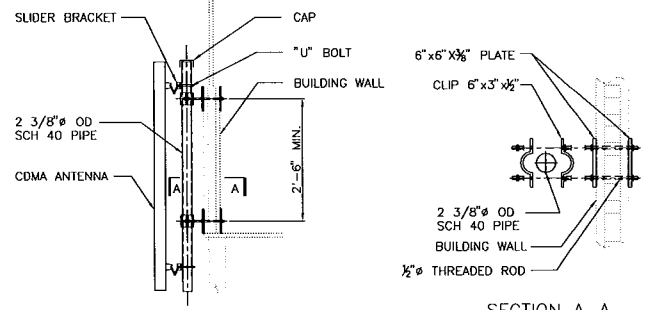
SITE
 CT0046/CT72XC030
 MOHAWK MOUNTAIN
 CONSTRUCTION DRAWINGS
 MOHAWK STATE FOREST
 CORNWALL, CT 06759

SHEET TITLE
 ELEVATION AND
 ANTENNA DETAILS

SHEET NUMBER
 A-2



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

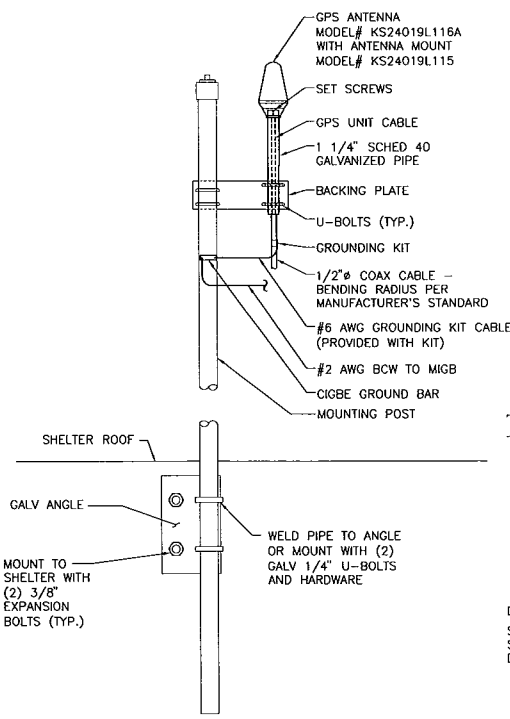


CDMA ANTENNA MOUNTING DETAIL
 SCALE: 3/4" = 1'-0"

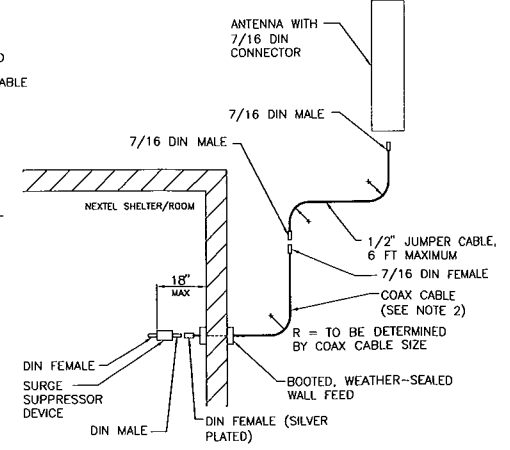
NOTES:

- COAX CABLE SIZE IS 7/8" OR UNLESS NOTED OTHERWISE. REFER TO RF SCHEDULE FOR CABLE SIZE, MANUFACTURER, AND COLOR-CODING.
- COLOR-CODE COAXIAL CABLE: - AT TOP, JUST ABOVE GROUND KIT, 2" WIDE TO BE VISIBLE FROM THE GROUND - AT BOTTOM, JUST OUTSIDE COAX PORT - INSIDE NEXTEL EQUIPMENT ROOM/ENCLOSURE - AT ALL WALL/FLOOR PENETRATIONS

CABLE SIZE (Ø)	MINIMUM BEND RADIUS IN TRAY	MINIMUM BEND RADIUS IN 4" OR 6" CONDUIT
1/2"	5"	10"
7/8"	10"	18"
1 1/4"	15"	22"
1 5/8"	20"	28"



GPS ANTENNA INSTALLATION
 SCALE: N.T.S.



TYPICAL ANTENNA SCHEMATIC
 SCALE: N.T.S.