



**GREENSVILLE COUNTY, VA
TECHNICAL REVIEW**

**Proposed New
199' Self Support Tower**

Pine Log Site

**Cellco Partnership
d/b/a
Verizon Wireless**

At

**0 Pine Log Road
Skippers, VA 23879**

Submitted by:

ATLANTIC TECHNOLOGY CONSULTANTS, INC.

A Member of The Atlantic Group of Companies

ATC PROJECT #: 1074-11

May 6, 2015



THE ATLANTIC GROUP
OF COMPANIES INC.

EXECUTIVE SUMMARY:

Cellco Partnership d/b/a Verizon Wireless (with their engineering firm Network Building & Consulting, LLC) has made application to the County for the issuance of a Special Use Permit to allow construction of a new 199' telecommunications support tower on Rt. 633 (Pine Log Road) at 0 Pine Log Road, Skippers, VA 23879 on property owned by Michael & Sheila Harp and Donald & Linda Driver.

NB&C is Verizon's engineering and consulting representative which includes construction, leasing, and management of communications towers and tower sites. Verizon proposes to build a 195' lattice tower with a 4' lightning rod, add twelve (12) panel style antennas, a graveled compound with an elevated 7' x 15' steel grating platform set on concrete piers for several pieces of equipment, UPS and electrical utility cabinets, a 4' x 8' concrete pad for a standby generator, 20' of ice bridge, various electrical utility mounting boards with meter bases within a 80' x 80' fenced compound. The 100' x 100' leased tower development area includes a non-exclusive easement 25' wide and 800' feet long out to Pine Log Road.

It is the opinion of this Consultant that the Applicant's plans conform to Federal, State, and County regulations regarding construction of telecommunications support structures and should therefore be considered for approval contingent upon the criteria noted in Section 3.0 "Recommendations" of this document.

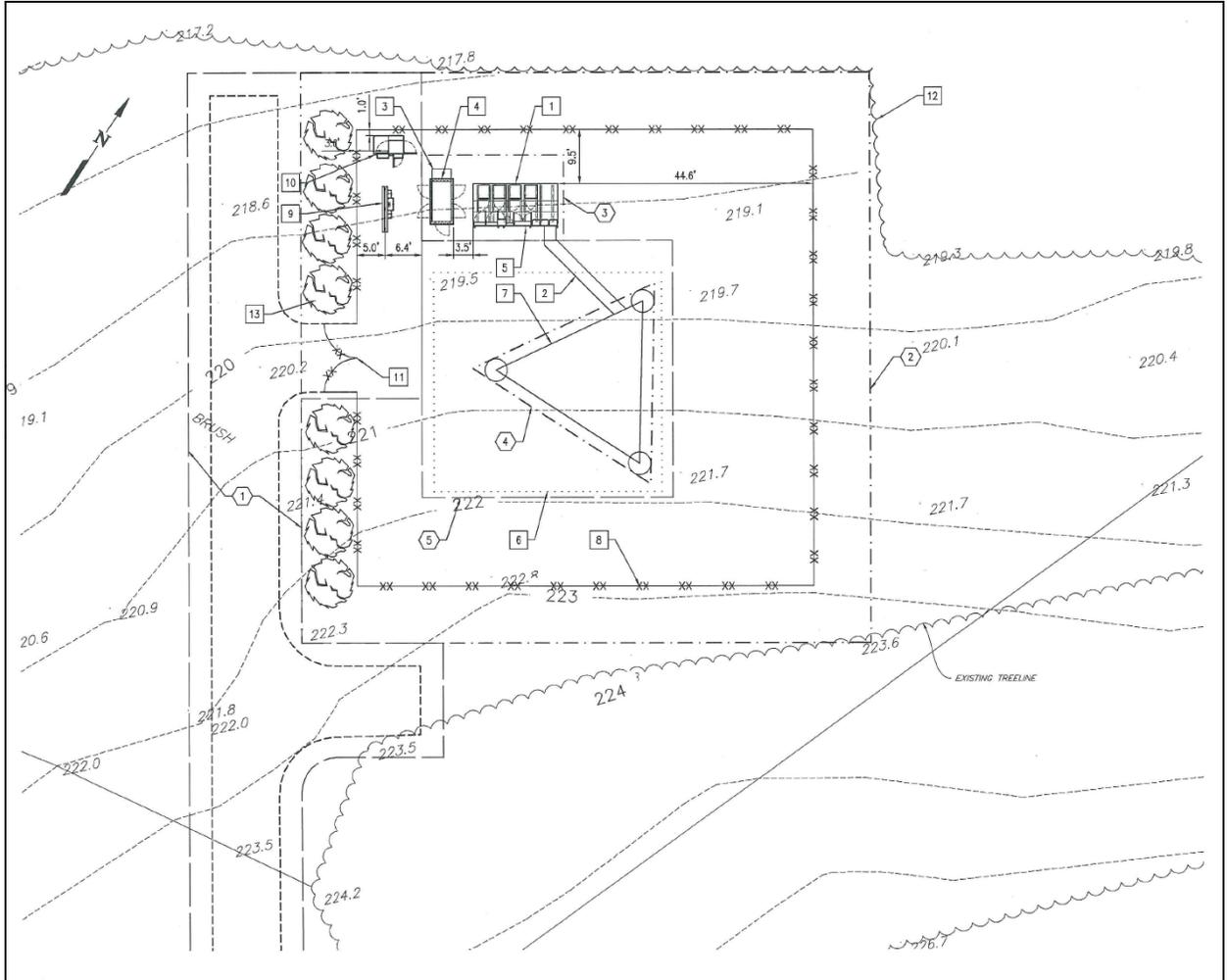


George N. Condyles, IV CPM
President and COO
Atlantic Technology Consultants, Inc.

1.0 TECHNICAL

1.1 Siting

The proposed tower site is located on a 25,000 square foot leased area on a 127.838 acre parcel. The property is zoned A-1 (Agriculture District) and located on Tax Map 42-22, GPIN # 7338-52-3417. The site can be accessed from Route 633 (Pine Log Road) and is physically located at 36° 36' 34.1" N and 77° 38' 17.1" W at a ground elevation of 220'.



From Pine Log Road access will involve crossing onto the subject property along a 25' ingress/egress (via a 12' wide gravel road) and utility easement.

The Applicant proposes to build a 195' lattice tower with a 4' lightning rod, add twelve (12) panel style antennas, graveled compound with an elevated 7' x 15' steel grating platform set on concrete piers for several pieces of equipment, UPS and electrical utility cabinets, a 4' x 8' concrete pad for a standby generator, 20'

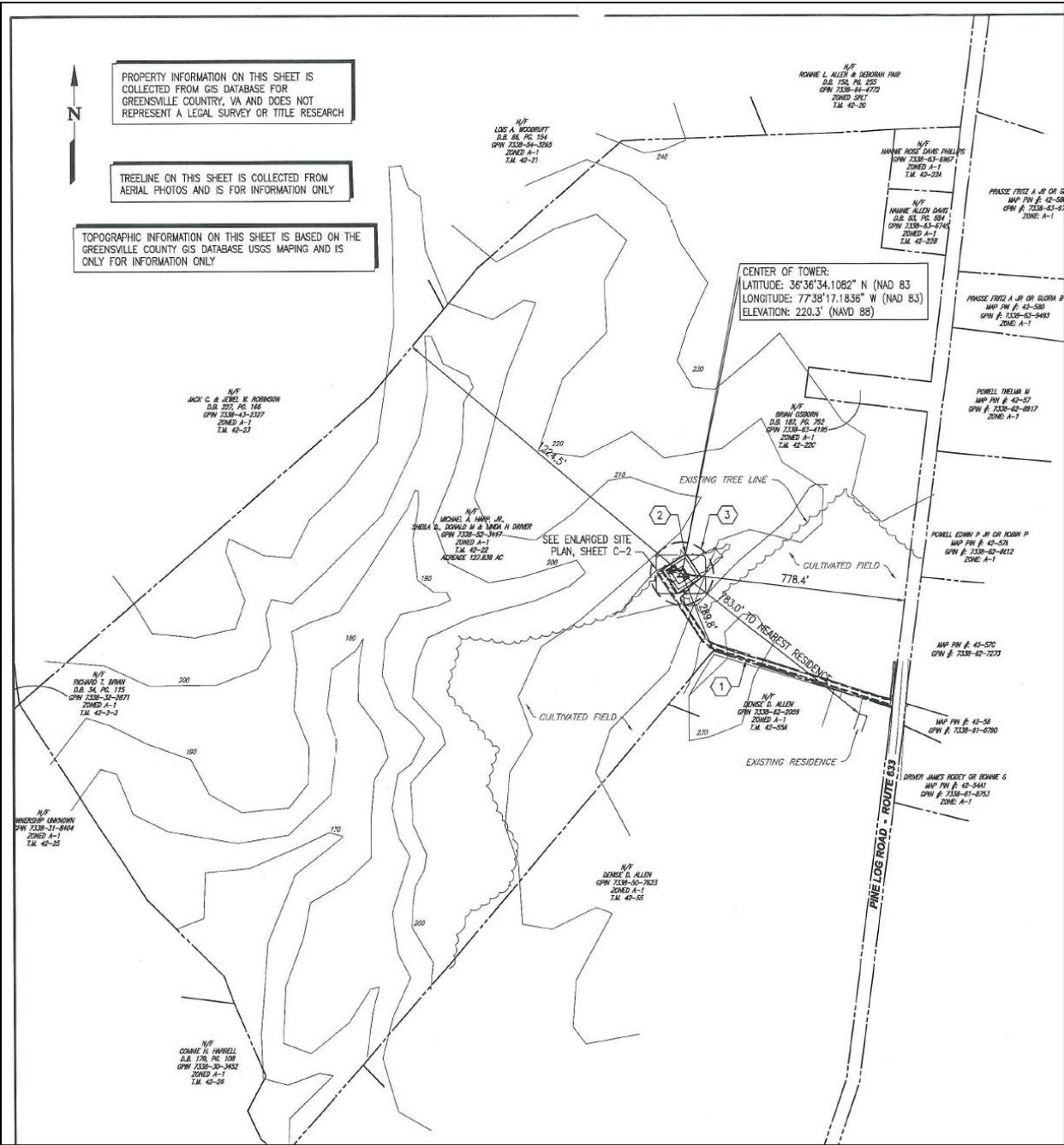
of ice bridge, and various electrical utility mounting boards with meter bases within a 80' x 80' fenced compound.

Setbacks:

Greensville County's minimum setback requirements as noted in Section 19-9 "Setbacks" of the County's Zoning Ordinance Article 19 "Standards of Telecommunications Antennas and Towers" are as follows:

"The following setback requirements shall apply to all towers and antennas for which a special use permit is required:

- (a) The tower must be set back from any off-site residential structure, cemetery, or public park no less than six times the height of the tower.
- (b) Accessory facilities must satisfy the minimum zoning district setback requirements for primary structures.
- (c) Towers must be set back from the lease area boundaries no less than 100 percent of the tower height.
- (d) The lease area boundaries must be set back from the total parcel boundaries the minimum distances as required by the underlying zoning district for principal uses.
- (e) Towers must be set back from any existing building, other than residential structures, which house people for other purposes (i.e., businesses, industries, schools, churches) no less than 100 percent of the tower height.
- (f) Residences constructed after the location of a tower must be set back a minimum of the 50 feet from the lease area boundaries."



Upon review of the Applicant's Engineering Site Drawings and observation by this Consultant during the site visit, it appears that the proposed tower and compound meets the County's above mentioned setback requirements. The Applicant indicates in their April 14, 2015 "Project Narrative" submitted with the Application that the proposed tower and compound is in compliance with Section 19-9 of the County's Zoning Ordinance.

Landscape Buffer and Screening:

The Applicant's "Project Narrative" states that trees will surround the tower compound on three sides and new trees will be planted on the south side to hide the compound for view.

In consideration of the proposed location of the tower site along with the current natural tree line which should be a sufficient buffer to the surrounding area, the County may consider waiving any landscaping requirements.

Co-location:

The County's Zoning Ordinance, Section 19-8 "Availability of suitable existing towers or other structures" states that "No new tower shall be permitted unless the applicant demonstrates to the reasonable satisfaction of the Greenville County Board of Supervisors that no existing tower or structure can accommodate the applicant's proposed antenna."

The Consultant agrees with the Applicant that there are no suitable existing towers within a 4 mile radius.

While Co-location at this site is preferable to construction of a new site, with such co-location minimizing visual impact of telecommunications equipment on the surrounding area, no additional sites are available in the area which would meet the Applicant's coverage objectives.

The Applicant has designed the proposed tower to accommodate multiple co-locations and submitted a Co-location Policy Statement.

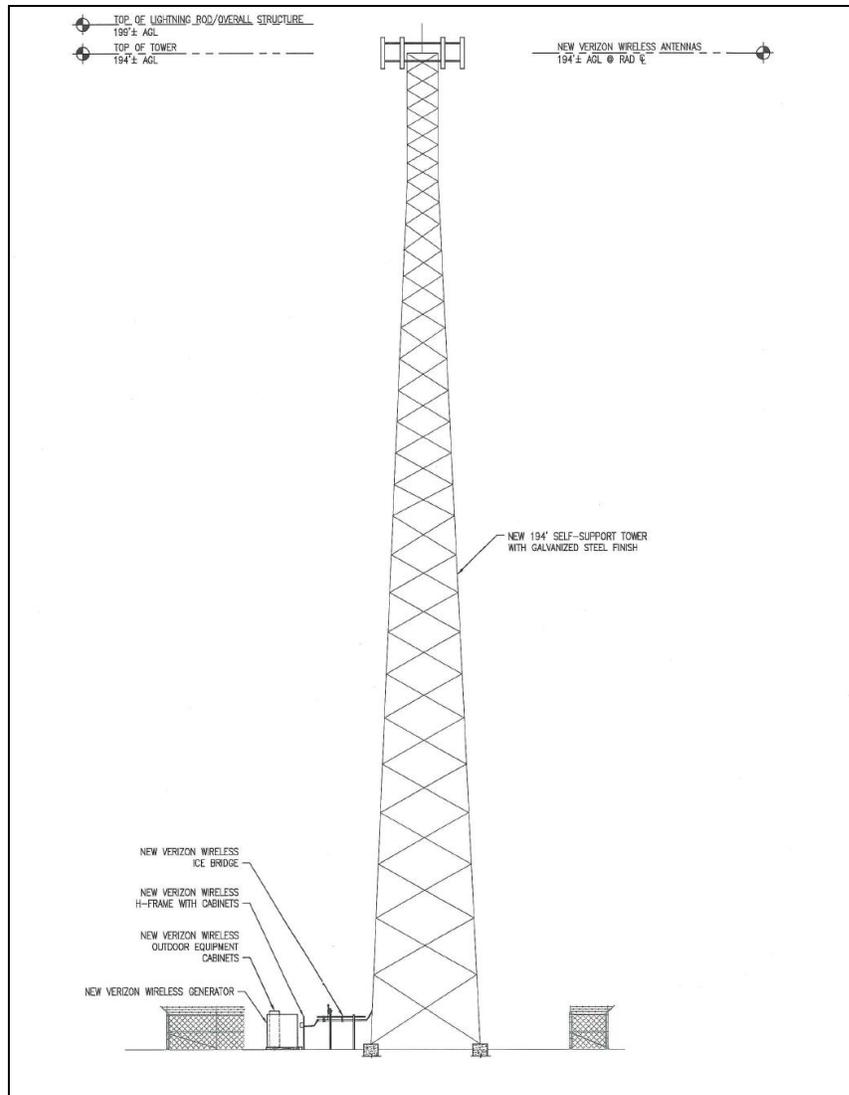
1.2 Structural

The proposed 195' self support lattice tower is designed with the ability to support equipment operated by multiple carriers. The supplied site plans are signed and sealed by a professional engineer licensed in the Commonwealth of Virginia.

A structural analysis was not included in the paperwork sent to ATC. A structural analysis takes into account the structural loading of the tower's own weight, that of the proposed appurtenances, and that of various iterations of wind, ice, and other environmental loading.

In the interest of thoroughness, the County may elect to require a copy of the new tower drawings and structural analysis for review prior to issuance of the building permit.

Practically speaking, however, it is noteworthy that this model of tower is designed to support appurtenances for multiple carriers and remain within EIA/TIA-222-G structural guidelines (the accepted industry standard) for structures, which mandates the ability to withstand the structural loading of all appurtenances, plus additional wind and ice loading.



Furthermore work at this site will remain in compliance with ALL federal, state, and local building codes and regulations if work proceeds as outlined in the supplied site plans.

1.3 RF Exposure

FCC bulletin OET-65 provides guidance for a licensee proposing to construct a telecommunications support structure in calculation of RF exposure limitations, including analysis of the cumulative effect of all transmitters on the structure.

Documentation of an RF exposure study is included with this application dated March 27, 2015 signed by Mr. David C. Cotton, P.E. of SiteSafe, Inc.

Mr. Cotton indicates below that this tower will conform to all FCC Guidelines as per Exposure.

**626 - Behind Pine Log
Radio Frequency (RF) Site Compliance Report**



847 Pine Log Road, Skippers, VA 23879



David Charles Cotton, Jr.
Professional Engineer
Commonwealth of Virginia, 0402045496
Sitesafe, Inc. (License#: 0407004659)
Date: 2015-March-27

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4. Conclusion

a. Conclusion Narrative

Description of MPE-Limit Exceeding Areas:

Verizon Wireless will be compliant with FCC Rules and Regulations.

The Max MPE predicted is <1% Occupational on the ground.

The Consultant sees no evidence of unsafe RF exposure levels being generated at this site if co-location by Verizon were to proceed as proposed.

Appropriate steps, including warning signage at the site, must be taken to protect both the general public and site workers from unsafe RF exposure in accordance with federal guidelines. RF site exposure warning signage shall be placed at this site, in conformance with FCC regulations and industry standards.

1.4 Grounding

Grounding of all structures and equipment at an RF site is critically important to the safety of both personnel and equipment at the site. Even a single component not meeting this standard places all other site components at risk for substantial damage. All structures and equipment at the site should maintain a ground potential difference of less than 5 ohms.

The Applicant's site plans do NOT have grounding specifications.

The Applicant will submit this plan when applying for a Building Permit.

1.5 General Safety

As indicated in the proposed site plans, the site compound will be surrounded by an 8-ft chain-link security fence with three strands of barbed wire on top to prevent unauthorized access to the tower site.

It is recommended that additional safety measures to be placed at this site include RF exposure warning signage, site identification information, and routine and emergency contact information. Moreover, the sit plans should include an OSHA approved style of fall prevention cable.

1.6 Interference

A Non-interference statement, taking into account all proximally located transmitters and receivers known to be active in the area, is advisable prior to any co-location.

A No- interference statement has been included with the Applicant's design.

The consultant sees no evidence of interference by or with this site after a general evaluation of the surrounding transmitter sites.

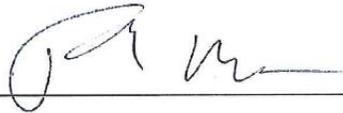
**Cellco Partnership d//b/a Verizon Wireless
Greensville County Special Use Permit Application
Pine Log Site
0 Pine Log Road, Skippers, VA 23879
Tax Map #42-22
GPIN#7338-52-3417
Radio Frequency Non-Interference Statement**

Greensville County Zoning Ordinance, Article, 19, Section 19-6-4. The antenna and/or tower shall be designed and installed so as not to interfere with the county's public safety communications system. The applicant shall perform an engineering study to determine the possibility of radio frequency interference with the county system. This study shall accompany the conditional use permit application.

In conformance with Section 19-6-4 of the Greensville County Zoning Ordinance, the proposed 199' self-support tower to be constructed on the above noted tax map parcel by Verizon Wireless will be designed and installed so as not to interfere with the operation of the Greensville County's public safety communications system and it will not interfere with any other wireless communication facility subsequently installed on the tower.

Verizon Wireless is the only wireless communication facility currently to be collocated on the tower at this time and the closest Greensville County's E911 tower facility is located over five miles from the proposed site so an engineering study to determine the possibility of radio frequency interference is not required due to the physical distance separating the facilities.

Signature



Date:

3/5/2015

Frank Mayer
Network Engineer
Verizon Wireless
1831 Rady Ct.
Richmond, VA 23222

Should any interference issues be posed with respect to this site, mitigation would nevertheless remain the responsibility of the tower owner and affected carrier(s), and would be regulated by the Federal Communication Commission, having no effect or burden on the County.

2.0 PROCEDUREAL

2.1 FAA Study

An initial search was performed by this Consultant via TOWAIR Determination under the ASR online system on the FCC website to determine if registration is required. The TOWAIR determination results were as follows:

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

TOWAIR Determination Results

***** NOTICE *****

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

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	36-36-34.1 north
Longitude	077-38-17.1 west
Measurements (Meters)	
Overall Structure Height (AGL)	60.7
Support Structure Height (AGL)	59.1
Site Elevation (AMSL)	67.1
Structure Type	
An Error has occurred. Please contact Technical Support http://wireless.fcc.gov/uls/support/index.html Phone (202) 414-1250 TTY (202) 414-1255 And report the following information.	
Error at Tue, May 5 at 18:05:46 EDT on Server wireless2.fcc.gov:kern Error Message Exception Message null	

2.2 FCC Antenna Site Registration:

This site does not have, and is not required to have, an antenna site registration number. However, for both routine and emergency identification purposes it is recommended that this site be registered with the Federal Communication Commission. All registered sites should have their registration number conspicuously displayed at the site.

2.3 Environmental Impacts

The National Environmental Policy Act of 1969 (NEPA), delineated in Title 47 of the Code of Federal Regulations, Part 1, Subpart I, sections 1.1301-1.1319, requires federal agencies to incorporate environmental considerations into their decision-making process when evaluating new construction proposals. As a licensing agency, the Federal Communication Commission (FCC) requires all licensees to consider the potential environmental effects from their construction of antenna support structures, and to disclose those effects in an Environmental Assessment (EA) that must be filed with the FCC for review.

As this Application proposes new site construction, a NEPA assessment is required. One has not been included with the Application; therefore it is assumed that such a study has not been performed.

The Applicant instructed that this Study will be complete prior to Building Permit issuance if approved.

The Consultant sees no potential Environmental Impacts.

2.4 Historic Impacts

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires that State Historic Preservation Offices (SHPO) and the President's Advisory Council on Historic Preservation be given a reasonable opportunity to comment on all undertakings with the potential to affect historic properties. Prior to construction, the licensee is required to submit to the SHPO a detailed description of the project, a listing of local historic resources, and a discussion of any measures being undertaken to mitigate impacts (if any) on historic resources. Upon receipt, the SHPO has thirty (30) days to review and respond to those submissions. All agencies with authority to permit construction are required to consider the SHPO response in its decision making process with respect to new construction applications.

As this Application proposes new site construction, a SHPO response is required.

A response from Virginia Department of Historic Resources (VDHR) has not been submitted with the Application.

The Applicant indicated that this Study would be complete prior to issuance of a building Permit.

The Consultant sees no Historical encroachment issues.

2.5 Supporting Documentation

The Applicant has submitted Photo simulations, an existing structures map and Verizon propagation maps as supporting documentation.

An independent RF analysis has been performed by this Consultant, with coverage maps appended to this report, indicating that the Applicant will be able to meet the stated coverage objectives by co-location as proposed.

Additionally and as indicated, no proximal sites affording co-location potential and meeting the stated coverage goals are available.

3.0 RECOMMENDATION

This application represents an appreciable intent on the part of the Applicant to conform to all applicable Federal, State, and Local regulations, accepted industry practices, and specific County ordinances regarding construction of new telecommunications towers.

It is therefore the recommendation of this Consultant that the request for issuance of a Special Use Permit to allow construction of this tower as proposed be considered for approval contingent upon the following:

- Grounding specifications are submitted with Building Permit Application.
- A NEPA Assessment is performed and submitted prior to Building Permit issuance.
- A response from Virginia Department of Historic Resources is submitted (part of NEPA) prior to Building Permit issuance.
- Air Space Study completed prior to Building Permit issuance.
- Tower Drawings & Structural Analysis stamped by Professional Engineer.

In closing, this consultant remains available to address any comments or questions which may arise following review of this report.

Any interested party with such comments or questions may feel free to contact this firm, which remains committed to delivering independent, objective, unbiased, and thorough consulting services.

Respectfully submitted,

A handwritten signature in cursive script, reading "George N. Condyles, IV".

George N. Condyles, IV, CPM
President & COO



Proposed Site





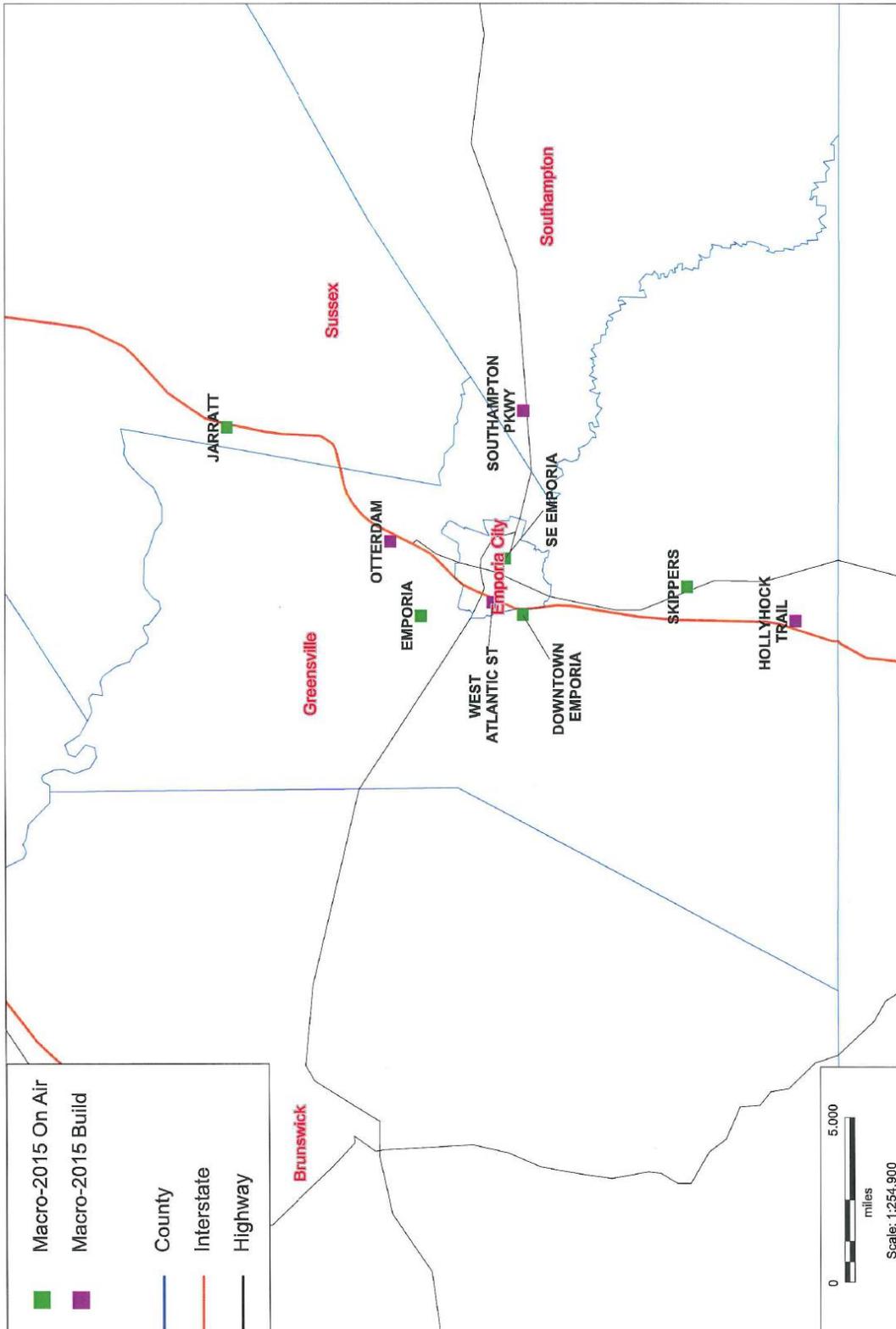
Views to Tower Location



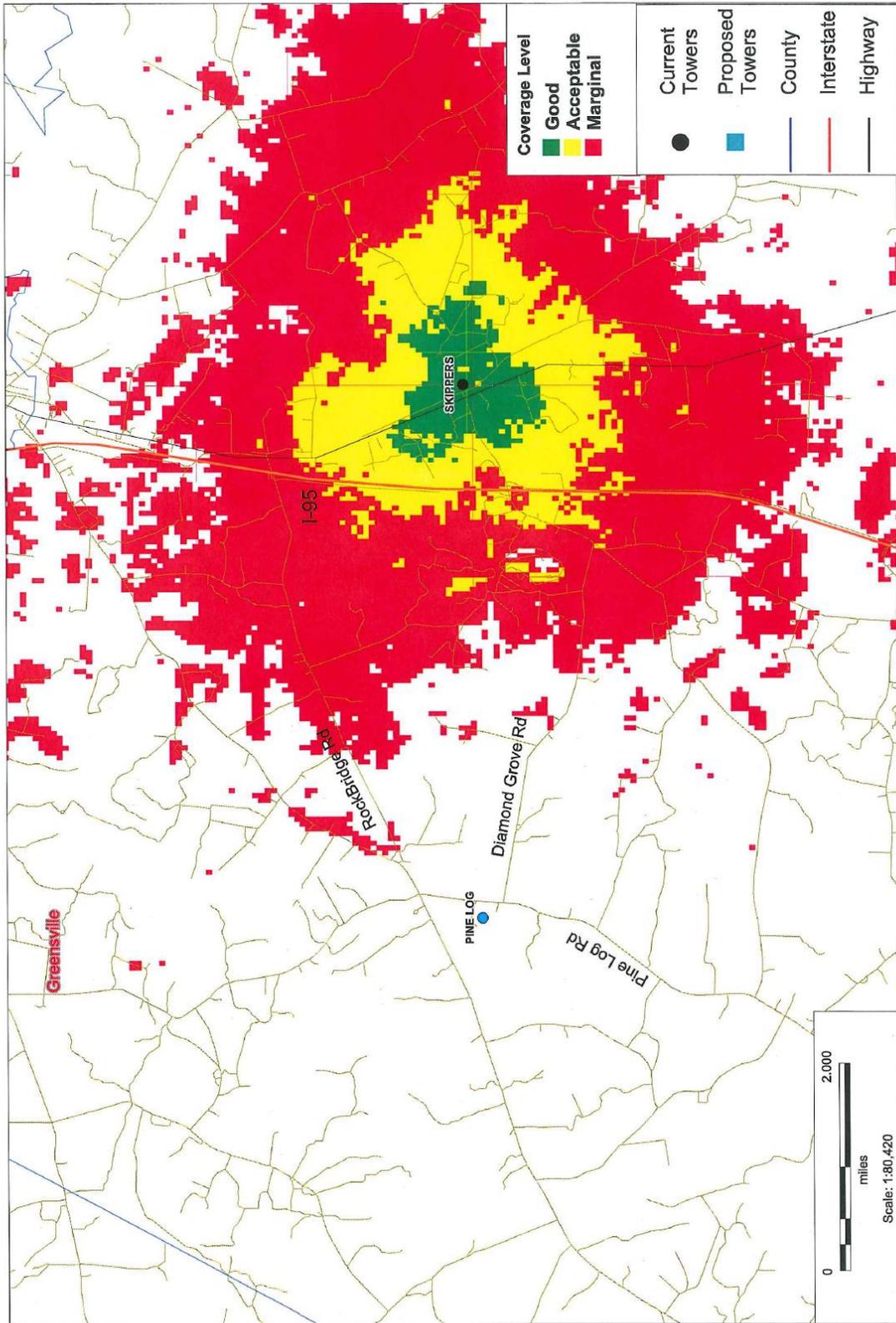


Closest Neighbor

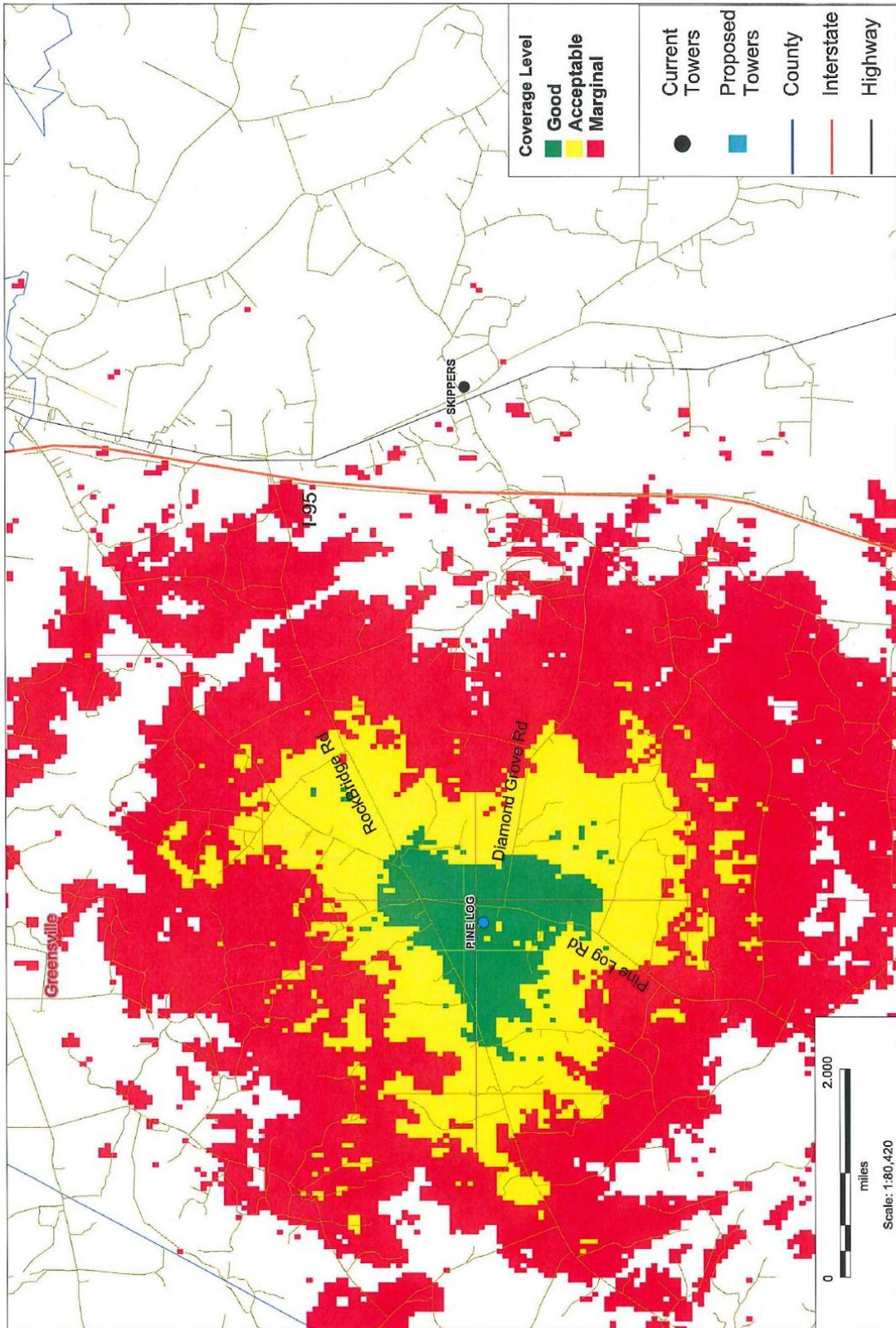
Greensville County 2015 Build Plan | 04-13-2015



Existing Coverage NO Pine Log ~ 03-06-2015



Proposed Coverage Only Pine Log @ 195FT AGL



Proposed Coverage WITH Pine Log @ 195FT AGL

