

**RICHLAND COUNTY  
BOARD OF  
ZONING APPEALS**

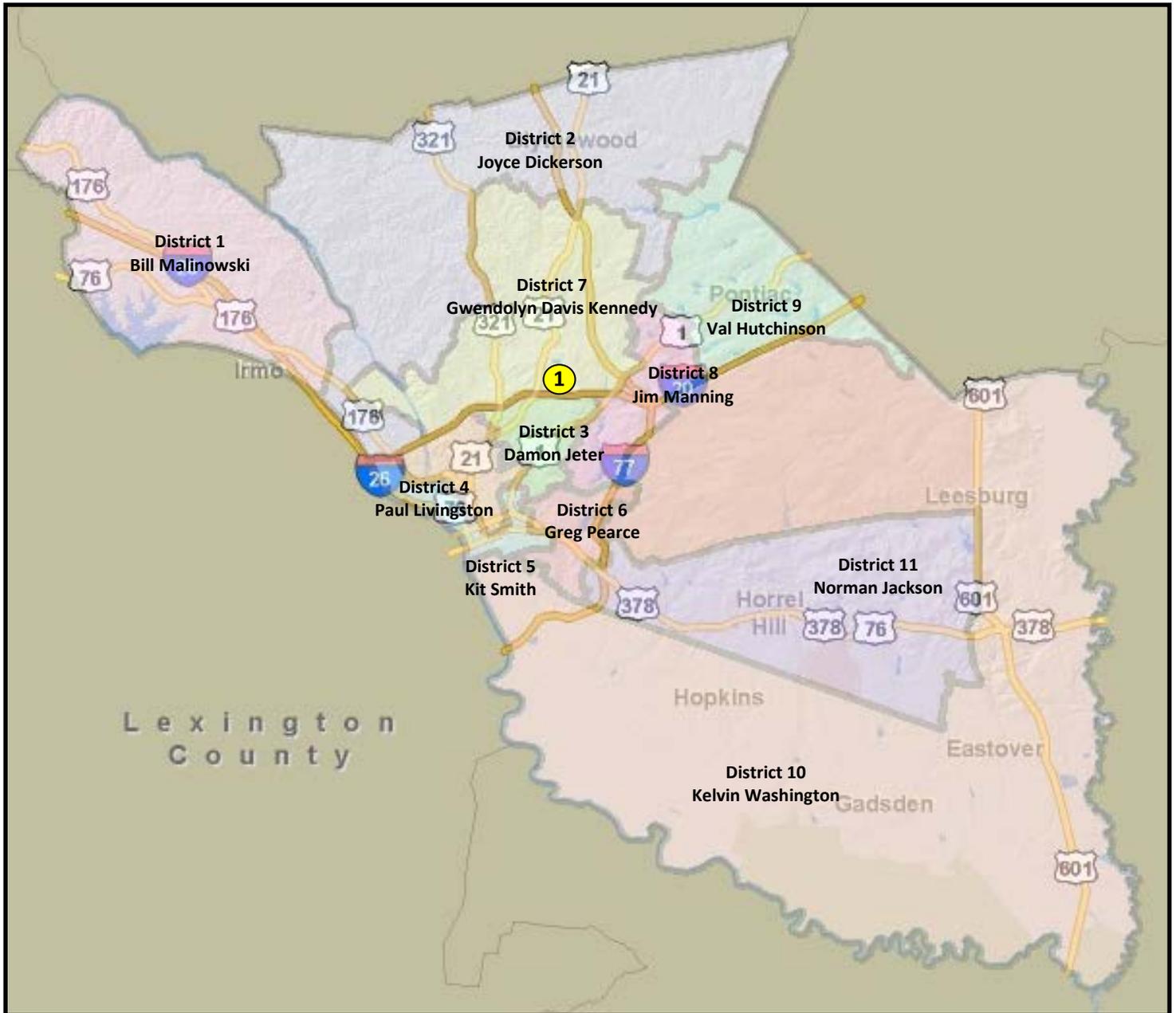


**Wednesday, 5 December 2012  
1:00 p.m.  
Council Chambers**



# RICHLAND COUNTY BOARD OF ZONING APPEALS

## December 5, 2012



CASE NO.	APPLICANT	TMS NO.	LOCATION	DISTRICT
1. 12-09 SE	William Howard PTA-FLA Inc. dba ClearTalk	14303-02-22	133 Plumers Road, Columbia, SC 29203	Kennedy





**Richland County  
Board of Zoning Appeals  
Wednesday, December 5, 2012  
2020 Hampton Street  
2<sup>nd</sup> Floor, Council Chambers**

## **Agenda**

**I. CALL TO ORDER & RECOGNITION OF QUORUM**      **Joshua McDuffie, Chairman**

**II. PUBLIC NOTICE ANNOUNCEMENT**

**III. RULES OF ORDER**      **Amelia Linder, Attorney**

**IV. APPROVAL OF MINUTES – September 2012**

**V. PUBLIC HEARING**      **Geonard Price,  
Deputy Planning Director/ Zoning Adm.**

### **OPEN PUBLIC HEARING**

**12-09 SE  
ClearTalk  
133 Plumers Rd.  
Columbia, SC 29209  
TMS# 27981-01-25**

**Requests a special exception for a cell tower on property  
zoned Light Industrial (M-1)**

**VI. OTHER BUSINESS**

**VII. ADJOURNMENT**



12-09 SE  
WILLIAM HOWARD  
PTA-FLA INC. DBA CLEAR TALK  
133 PLUMERS ROAD,  
COLUMBIA, SC 29203  
14303-02-22







## REQUEST, DISCUSSION AND RECOMMENDATION

### **CASE:**

12-09 Special Exception

### **REQUEST:**

The applicant is requesting the Board of Zoning Appeals to grant a special exception to permit the construction of a communication tower in a RU (Rural) district.

### **GENERAL INFORMATION:**

**Applicant:** William Howard  
PTA-FLA Inc. dba ClearTalk

**TMS:** 14303-02-22

**Location:** 133 Plumers Road, Columbia, SC 29203

**Parcel Size:** 3.30 acre tract

**Existing Land Use:** The parcel is currently occupied by a hotel (Days Inn).

**Proposed Land Use:** The applicant proposes to erect a 180-foot telecommunications tower, within a 6,000 (100 x 60) square foot leased area.

**Character of Area:** The immediate surrounding area consists of industrially developed parcels.

### **ZONING ORDINANCE CITATION:**

Table 26-V-2 of the Land Development Code authorizes the Board of Zoning Appeals to authorize radio, television and all other types of communications towers subject to the provisions of section 26-152 (d) (22).

### **CRITERIA FOR SPECIAL EXCEPTION:**

In addition to definitive standards in this chapter, the Board shall consider the following:

1. Traffic impact.
2. Vehicle and pedestrian safety.
3. Potential impact of noise, lights, fumes or obstruction of airflow on adjoining property.
4. Adverse impact of the proposed use on the aesthetic character of the environs, to include possible need for screening from view.
5. Orientation and spacing of improvements or buildings.

---

### **Special exception requirements (as found in section 26-152 (d) (22)):**

(22) *Radio, television and telecommunications and other transmitting towers.*

- a. Use districts: Rural; Office and Institutional; Neighborhood Commercial; Rural Commercial; General Commercial; LI Light Industrial; Heavy Industrial.
- b. Communication towers shall have a maximum height of three hundred (300) feet. For towers on buildings, the maximum height shall be twenty (20) feet above the roofline of buildings forty (40) feet or four stories in height or less. For buildings greater than four stories or forty-one (41) feet in height, the maximum height of communication towers shall be forty feet above the roofline.

- c. The minimum setbacks for communication towers from abutting districts shall be as follows: (Ord. No. 040-09HR; 7-21-09)
  1. Communication towers abutting a residentially zoned parcel shall have a minimum setback of one (1) foot for each foot of height of the tower as measured from the base of the tower. The maximum required setback shall be two hundred and fifty (250) feet. (Ord. No. 040-09HR; 7-21-09)
  2. Communication towers abutting a non-residentially zoned parcel with a habitable residential dwelling shall have a minimum setback of fifty (50) feet. (Ord. No. 040-09HR; 7-21-09)
  3. Communication towers abutting a non-residentially zoned parcel without a habitable residential dwelling shall observe the setbacks of the district in which it is located. (Ord. No. 040-09HR; 7-21-09)
- d. The proposed user must show proof of an attempt to collocate on existing communication towers, and must be willing to allow other users to collocate on the proposed tower in the future subject to engineering capabilities of the structure. Evidence of an attempt to collocate must show that alternative towers, buildings, or other structures are not available for use within the applicant's tower site search area that are structurally capable of supporting the intended antenna or meeting the applicant's necessary height criteria, or provide a location free of interference from other communication towers.
- e. Towers shall be illuminated as required by the Federal Communications Commission, Federal Aviation Administration, or other regulatory agencies. However, no nighttime strobe lighting shall be incorporated unless required by the Federal Communications Commission, the Federal Aviation Administration, or other regulatory agency.
- f. Each communication tower and associated buildings shall be enclosed within a fence at least seven (7) feet in height.
- g. Each communication tower site shall be landscaped in accordance with the requirements of Section 26-176 of this chapter.
- h. No signage may be attached to any portion of a communications tower. Signs for the purpose of identification, warning, emergency function or contact or other as required by applicable state or federal rule, law, or regulation may be placed as required by standard industry practice.
- i. A communications tower which is no longer used for communications purposes must be dismantled and removed within one hundred twenty (120) days of the date the tower is taken out of service.

**DISCUSSION:**

The applicant proposes to erect a 180-foot monopole telecommunications tower, within a 6,000 square foot compound.

Staff visited the site.

According to the provisions of subsection 26-152 (d) (22) (c) (3), towers shall observe the setbacks of the district in which it is located when abutting a non-residentially zoned parcel without a habitable residential dwelling. The required setbacks for the M-1 district are:

- Front - 25 feet
- Rear - 10 feet
- Side - None

The tower is proposed to be located at least 25 feet from each property line.

Meeting the criteria for a special exception in section 26-152 (d) (22) (c) may indicate that the applicant has taken necessary measures to minimize the impact of a communication tower on the surrounding area. Staff believes that this request will not impair the properties in the immediate or surrounding area.

The applicant must address, before the Board, the special exception requirements of section 26-152 (d) (22) (d).

Staff recommends approval for this request.

**CONDITIONS:**

Section 26-56 (f) (3)

(3) Conditions: In granting a special exception, the board of zoning appeals may prescribe conditions and safeguards in addition to those spelled out in this chapter. The board of zoning appeals may also prescribe a time limit within which the special exception shall be begun or completed, or both. All conditions placed on the project by the board of zoning appeals shall be incorporated into such project.

**OTHER RELEVANT SECTIONS:**

N/A

**CASE HISTORY:**

No record of previous special exception or variance request.

**ATTACHMENTS:**

- Site plan
- Zoning Application Packet





# BOARD OF ZONING APPEALS

## SPECIAL EXCEPTION



1. Location: 133 Plumbers Rd, Columbia, SC 29203

TMS Page: R14303 Block: 02 Lot: 22 Zoning District: M-1

2. The Board of Zoning Appeals is requested to consider the granting of a special exception permitting:  
180 feet tall co-locatable communications tower with ground based equipment

3. Describe the proposal in detail: see attached narrative

---



---

4. Area attributed to the proposal (square feet): ~~0~~ 6,000 SQ. FT.

5. Are other uses located upon the subject property?  No  Yes (if Yes, list each use and the square footage attributed to each use):

a. Use Hotel / Motel square footage 22,256

b. Use \_\_\_\_\_ square footage \_\_\_\_\_

c. Use \_\_\_\_\_ square footage \_\_\_\_\_

6. Total number of parking spaces on the subject property: 30

7. Total number of employees on shift of greatest employment: 15

8. Address the following **Standards of Review** (Sec. 26-56 (f) (2) of the Richland County Land Development Code). Please note that the members of the Board of Zoning Appeals will use your answers, among other things, as they evaluate your request.

a. Traffic impact: see attached narrative

---



---

b. Vehicle and pedestrian safety: see attached narrative

---



---

c. Potential impact of noise, lights, fumes or obstruction of airflow on adjoining property: \_\_\_\_\_  
see attached narrative

---

d. Adverse impact of the proposed use on the aesthetic character of the environs, to include possible need for screening from view: see attached narrative

---



---

e. Orientation and spacing of improvements or buildings: see attached narrative

---



---

**STATEMENT OF INTENT**

PTA-FLA Inc., d.b.a. ClearTalk respectfully submits this Statement in support of its Special Exception Application to the Richland County Board of Zoning Appeals to construct. Operate and manage a 180' self-supporting wireless communication facility' on the property currently owned by AMBE MAA, Inc., President Praful Patel located at 133 Plumbers Road in Richland County (Tax Map No. R14303-02-22).

The proposed site is a critical component of ClearTalk's core wireless network services in the Columbia metropolitan area and, more specifically, will serve a portion of the I-20 corridor from approximately Fairfield Road to Farrow Road and the residential areas along Wilson Blvd and North Main Street.

Attached to this Statement are the following Exhibits:

1. Exhibit "A" - A letter of authorization from the current landowner, AMBE MAA, Inc. (property owner's authorization is given on the "Board of Zoning Appeals Notice of Appeals" application.
2. Exhibit "B" - Site Plan and Survey.
3. Exhibit "C" - Richland County Aerial Photo and Parcel Map.
4. Exhibit "D" - A letter from ClearTalk's RF (Radio Frequency) Engineer. William Howard summarizing ClearTalk's network design and this site's importance to coverage in the above-described area, as well as ClearTalk's unsuccessful attempts to co-locate on existing towers in the area.
5. Exhibit "E" - A copy of ClearTalk's FCC license for the Columbia, SC market.
6. Exhibit "F" - The application to FAA for a Determination of No Hazard Status.

(please see the attached preliminary FAA approval of the location. The proposed structure is less than 200' tall, which is below threshold for the FAA approval process. However, upon approval of this application, we will apply for FAA an determination of no hazard to air navigation and we accept that the final approval of this project shall be subject to FAA approval)

### **Introduction**

ClearTalk is a national provider of low-cost, flat rate wireless communications services. We operate under the basic principal that wireless phone and high-speed Internet should be simple, affordable and available everywhere. We have been building mobile networks in underserved areas of the country since 1999.

In the past eleven years, ClearTalk has built wireless networks in seventeen different markets including Colorado (Grand Junction); Idaho (Pocatello/Twin Falls); Tennessee (Jackson); Alabama (Florence); Arizona (Yuma) California (El Centro) Florida (Jacksonville) and Texas (Lubbock).

We are currently building out two networks in South Carolina (Columbia and Greenville). Once they are deployed ClearTalk will offer the citizens of both markets a low-cost, flat rate alternative for wireless communications services.

### **The Technology**

ClearTalk operates its wireless network in the 1710-megahertz range of the AWS band and our antennas function with an effective radiated power ("ERP") of 500 watts. Our communications facilities will not interfere with television or radio reception because we are licensed by the FCC to operate in this very specific frequency throughout our Basic Trading Area ('BTA') Columbia.

### **The RF Design and Site Selection Process**

This proposed site is critically important to our core network for the Columbia area. It will serve a crucial area of Richland County that includes a portion of the I-20 corridor from approximately Fairfield Road to Farrow Road and the residential areas along Wilson Blvd and North Main Street. Although outside the city of Columbia, this site will provide robust indoor coverage to the dense population of city residents to the south and the numerous businesses and subdivisions in the county to the north.

The process of developing a wireless network includes designing a system-wide grid of smaller cells, each containing a single antenna that will receive and transmit our signal. Each cell must be precisely located relative to the other cells so that they can create an effective communication grid and provide signal continuity. The design of this grid must take into account not only the antenna's radius of reliable transmission but also population density, traffic patterns and the topography of the area.

ClearTalk's strong preference is to co-locate on existing towers whenever possible. Co-location is the quickest and most cost effective way to build out a new network. Out of the 50 initial requirements in our core Columbia BTA, we have signed agreements to co-locate on 43 existing towers or rooftops. This is the eighth site requirement in our network core where co-location is not a viable option.

There are no existing towers in this area.

The proposed "Plumbers Road" site has been carefully selected to meet the goals of the community while providing adequate height and range for ClearTalk's network. The proposed tower is also designed to allow for future co-location of additional carrier or government services equipment.

### **The Proposed Facility**

PTA-FLA, Inc., a subsidiary of ClearTalk has entered into a contract to purchase a 60' x 100' portion of the 3.3 acre tract owned by AMBE MAA, Inc. located at 133 Plumbers Road in Richland County as depicted on the Site Plan included in Exhibit "B". We propose to construct a 180' self support (or lattice) communications tower as depicted also in Exhibit "B" as shown on the Site Plan. In addition to the tower, the fenced compound will contain our equipment cabinet that is 6'2" high, 2' wide & 2' deep.

### **Zoning Standards & Compliance**

The property is zoned M-1 (Light Industrial) by Richland County. Existing on this parcel is one Days Inn motel but no other habitable dwellings.

The proposed tower will be set back approximately 250' from the Plumbers Road right-of-way and we will landscape the perimeter of the fenced compound for screening.

Richland County's Special Exceptions standards for Wireless Telecommunication Towers are contained in Code Sec. 26-152(d)(22). In this Section, a Wireless Telecommunication Tower is allowed on M-1 zoned property with a Special Exception granted by the Board of Zoning Appeals. The relevant Special Exceptions standards are listed below with our response:

#### ***Sec. 26-152 (d)(22): Radio, television and telecommunications and other transmitting towers***

***a. Use districts: Rural; Office and Institutional; Neighborhood Commercial; Rural Commercial; General Commercial; M-1 Light Industrial; Heavy Industrial***

Response: The tower will be located on a 60' x 100' parcel located within a 3.30 acre zoned M-1 Light Industrial in Richland County (Tax Map No. R14303-02-22).

***b. Communication towers shall have a maximum length of three hundred (300) feet. For towers on buildings, the maximum height shall be twenty (20) feet above the roofline of buildings forty (40) feet or four stories in height or less. For buildings greater than four stories or forty-one (41) feet in height, the maximum height of communications towers shall be forty feet above the roofline.***

Response: The proposed tower will be 180' from the ground-mounted base.

***c. The minimum setbacks for communications towers from abutting districts shall be as follows:***

- 1. Communication towers abutting a residentially zoned parcel shall have a minimum setback of one (1) foot for each foot of height of the tower as measured from the base of the tower. The maximum required setback should be two hundred and fifty (180') feet.***
- 2. Communication towers abutting a non-residentially zoned parcel with a habitable residential dwelling shall have a minimum setback of fifty (50) feet.***
- 3. Communication towers abutting a non-residentially zoned parcel without habitable residential dwelling shall observe the setbacks of the district in which it is located.***

Response: The proposed tower location abuts only M-1 zoned parcels and meets or exceeds all required district setbacks as shown in the following table:

Adjoining Parcel Map#	Zoning	Required Set-Back	Proposed Set-Back
#R14303-02-21	M-1	0'	25'
#R14303-02-34	M-1	10'	103'
#R14303-02-23	M-1	10'	184'
#R14303-02-05	M-1	10'	396'
Plumbers Road		25'	250'

***d. The proposed user must show proof of an attempt to co-locate on existing communications towers, and must be willing to allow other users to co-locate on the proposed tower in the future subject to engineering capabilities of the structure. Evidence of an attempt to co-locate must show that alternative towers, buildings or other structures are not available for use with the applicant's tower search area that are structurally capable of supporting the intended***

***antenna or meeting the applicant's necessary height criteria, or provide a location free of interference from other communication towers.***

It is ClearTalk's strong preference to co-locate on existing towers whenever possible. Co-location is the quickest and most cost effective way to build out a new network. Out of the 50 initial requirements in our core Columbia BTA we have signed agreements to co-locate on 43 existing towers or rooftops. This is the eighth site requirement in our network core where co-location was not a viable option.

The tower will be designed for future co-location opportunities. All of the towers in our network are available for co-location and we have numerous lease agreements in place with all the national wireless companies.

***e. Towers shall be illuminated as required by the Federal Communications Commission, Federal Aviation Administration, or other regulatory agencies. However no nighttime strobe lighting shall be incorporated unless required by the Federal Communications Commission, Federal Aviation Administration, or other regulatory agency.***

Response: The proposed height of this tower at 180' will comply with a FCC and safety requirements and will be lighted under the requirements.

***f. Each communication tower and associated buildings shall be enclosed within a fence at least seven (7) feet in height.***

Response: The proposed 60' x 100' site will be enclosed with a chain link fence that will be at least seven (7) feet in height, and will be topped with industry standard three-stranded barbed wire for safety and security of the site.

***g. Each communication tower shall be landscaped in accordance with the requirements of Section 26-176 of this Chapter.***

Response: ClearTalk will acquire the 60' x 100' tract and build the proposed tower as shown on the attached site plan. The property will be landscaped in accordance with the requirements of Chapter 26-176 of the Code.

***h. No signage may be attached to any portion of a communications tower. Signs for the purpose of identification, warning, emergency function or contact or other as required by applicable state or federal rule, law, or regulation may be placed as required by standard industry practice.***

Response: ClearTalk will not install any signage on any part of the tower. We will only install the required federal identification information. Safety signage and emergency contact information on industry standard signs located on the compound gate or elsewhere on the fence as required by law.

*i. A communication tower that is no longer used for communications purposes must be dismantled and removed within one hundred and twenty (120) days of the date the tower is taken out of service.*

Response: If the Tower is taken out of service. ClearTalk will dismantle and remove it within one hundred and twenty (120) days of the date it was taken out of service.

Richland County's General Conditions for granting a Special Exceptions request are set forth below with ClearTalk's response.

***Sec. 26-152 Special Exceptions:***

***(b) Conditions. All special exceptions shall, at a minimum, meet the conditions set forth in this section. The Board of Zoning Appeals shall approve or deny all application for special exception (see also Section 26-56 of this chapter) based on the following:***

***(1) A determination that all standards for the particular use, as defined in this article and in other relevant sections of this chapter, have been met.***

Response: See the discussion above. ClearTalk has addressed all development standard set forth in Section 26-152(d)(22) of the Code.

***(2) A finding that the special exception is in harmony with the intent and purpose of this chapter. In making this determination, the board shall consider tile following:***

***(a) Traffic impacts.***

Response: The tower will be unmanned and will only require infrequent maintenance visits.

***(b) Vehicle and pedestrian safety.***

Response: The tower will be located on the rear portion of a 60' x 100' site approximately 250' off of Plumbers Road with all required safety fencing. It will not affect vehicles or pedestrians on Plumbers Road.

***(c) Potential impact of noise, lights, fumes or obstruction of airflow on adjoining properties.***

Response: The tower will not emit any noise or odors and will not be required to have any lights other the noise required by FAA and/or FCC regulations.

***(d) Adverse impact of the proposed use on the aesthetic character of the environs, to include the possible need for screening from view.***

Response: The proposed site is located in a Light Industrial area. The adjoining sites to the north are also M-1 Light Industrial. To the south, the closest residential properties are on the far side of I-20. To the west, the closest residential properties are west of Wilson Boulevard. To the East, are multiple plots zoned Light Industrial. The industrial use and nature of this site's neighboring parcels will effectively buffer this proposed tower from the nearest residential structures.

***(e) Orientation and spacing of improvements or buildings.***

Response: See attached Site Plan

***In granting a special exception, the board may impose additional restrictions and requirements, as it may deem necessary in order that the purpose and intent of this chapter are served.***

Response: ClearTalk will be pleased to discuss any additional restrictions or requirements that the Board or Staff deems necessary.

**Conclusion**

ClearTalk's proposed Plumbers Road site is critically important to our core network for the Columbia BTA. It serves a crucial area of Richland County that a portion of the I-20 corridor from approximately Fairfield Road to Farrow Road and the residential areas along Wilson Blvd and North Main Street. ClearTalk explored the possibility of co-locating on existing towers in this area, however, no structures within the ¼ mile search ring were deemed structurally suitable.

The site has been carefully selected to provide our networks the required coverage, to provide adequate screening and buffering from the surrounding area, and to meet or exceed all the development standards of the Richland County Code.

While the overwhelming majority of our sites are being developed through co-location on existing towers, the necessary addition of this tower will allow us to complete our core network and provide a reliable, affordable option for wireless services to the community.

ClearTalk requests that the Board of Zoning Appeals approve this Special Exception Application for the proposed communications tower on the M-1, Light Industrial zoned parcel. Tax Map No. R14303-02-22.



EXHIBIT "D"

September 29, 2012

Re: Special Exception Application to the Board of Zoning Appeals filed by  
PTA-FLA, Inc. (Clear Talk) for a Communications Tower 2290.

Dear County of Richland:

The purpose of this letter is to outline Cleartalk Wireless's need for the Wilson Blvd site from a technical design standpoint.

***Considerations for Designing AWS Systems***

With the seemingly ubiquitous use of mobile devices, the Federal Communications Commission (FCC) sought to introduce additional service providers. It was an effort to increase competition, which in turn would drive down the price of quality wireless telephony. This was achieved by allocating a segment of frequency for companies who bought the rights and committed to providing wireless AWS voice and data service in their licensed area.

Cleartalk Wireless is obliged to the FCC to provide quality AWS service to existing and future customers in BEA 24 which includes the county of Richland. Constant network maintenance and optimization is fundamental to providing high-quality digital voice and data communication services to our customers. Cellular networks operate in the 800 MHz frequency band, PCS networks operate in the 1900 MHz band and AWS utilizes the 2100 MHz band. Since radio waves propagate significantly better at lower frequencies, AWS sites must be spaced closer together than those in cellular and PCS networks from a coverage perspective. The fact that AM radio stations reach greater distances than FM radio stations (which are at higher frequencies) is another example of the same phenomenon.

A “grid” of sites must then be deployed to provide continuous coverage over the service area. Any given site in that grid is designed as part of the entire continuity of the network and cannot be considered in isolation. Design changes to one site impact those around it. Movement of a site creates a domino effect on the entire network. Once sites have been built, movement or loss of a site can be devastating to the quality of the network.

The Cleartalk Wireless network is designed around existing telecommunications structures and collocations are pursued whenever feasible. The Wilson Blvd site is a primary candidate for Richland County and the residential, commercial, and industrial areas along a three mile stretch of I20 in the vicinity of exit 74. The exact placement of other sites into a grid around this site and the spacing of the grid is what wireless system design engineering encompasses. Some of the basic considerations are outlined below.

### ***Design Objectives***

Cleartalk Wireless is committed to providing only the highest quality AWS network to its customers. Any two-way wireless system, such as AWS telephony, has three basic design objectives which must be met. First, the network must provide *coverage* over the region of operation, meaning there is sufficient signal strength for customers to receive and make calls. Secondly, the network must be designed to handle the *capacity* of calls generated by its customers. This equates to having a sufficient number of channels for users to place calls. Without sufficient capacity, even in areas with strong signal strength and excellent coverage, users are blocked from making a call and get a “fast busy” signal. Larger capacity requires more sites that are spaced closer together and the Cleartalk Wireless network has been designed to handle a large number of anticipated users.

Thirdly, the *quality* of the network is essential. This encompasses a number of issues which are related to the coverage and capacity of a network. Insufficient signal strength (coverage) is the prime culprit of poor voice quality and slow data rates. However, interference from the radio waves from our other sites can be just as devastating to voice quality/bandwidth and results in a very delicate engineering design requiring a balance between maximizing coverage and minimizing interference. For this reason, careful site selection is critical. Sites that are too close to each other or too tall can cause damaging interference. Sites that are too far apart or too short may not provide sufficient signal strength to an area.

Quality also refers to the level of service that will be offered, or stated another way, where the mobile devices will work: only outside and away from any obstructions; inside vehicles; inside homes; or inside dense office buildings and shopping centers. These increasing levels

of service require stricter design considerations. The most basic level of service that must be provided along highways is in-vehicle coverage. ClearTalk Wireless must also be able to provide in-home coverage in all areas of our licensed market to satisfy customer expectations.

### ***Objectives of the Wilson Blvd Site***

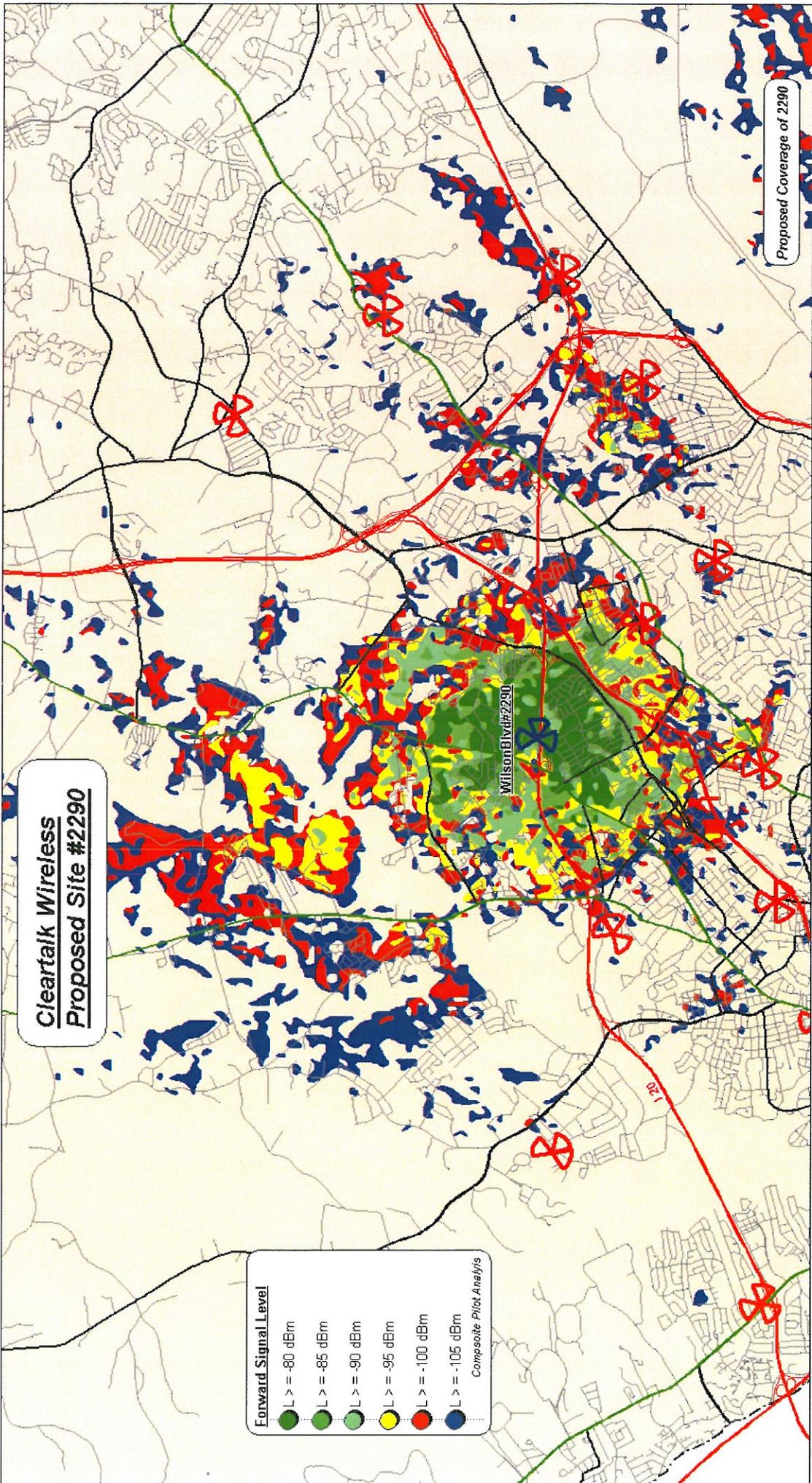
The Wilson Blvd site will serve the densely populated area surrounding exit 74 of I20 by covering a three mile stretch of the interstate. It will carry a substantial number of calls during the busy drive hours and will facilitate connecting existing sites and mitigate the current network issues (insufficient forward power and handoff) due to a lack of capacity. It will also serve as the first site in an expansion effort as we grow coverage toward Winnsboro and Blythewood. Drop call frequency will also be diminished between our current collocations on ATC and Crown Castle collocations.

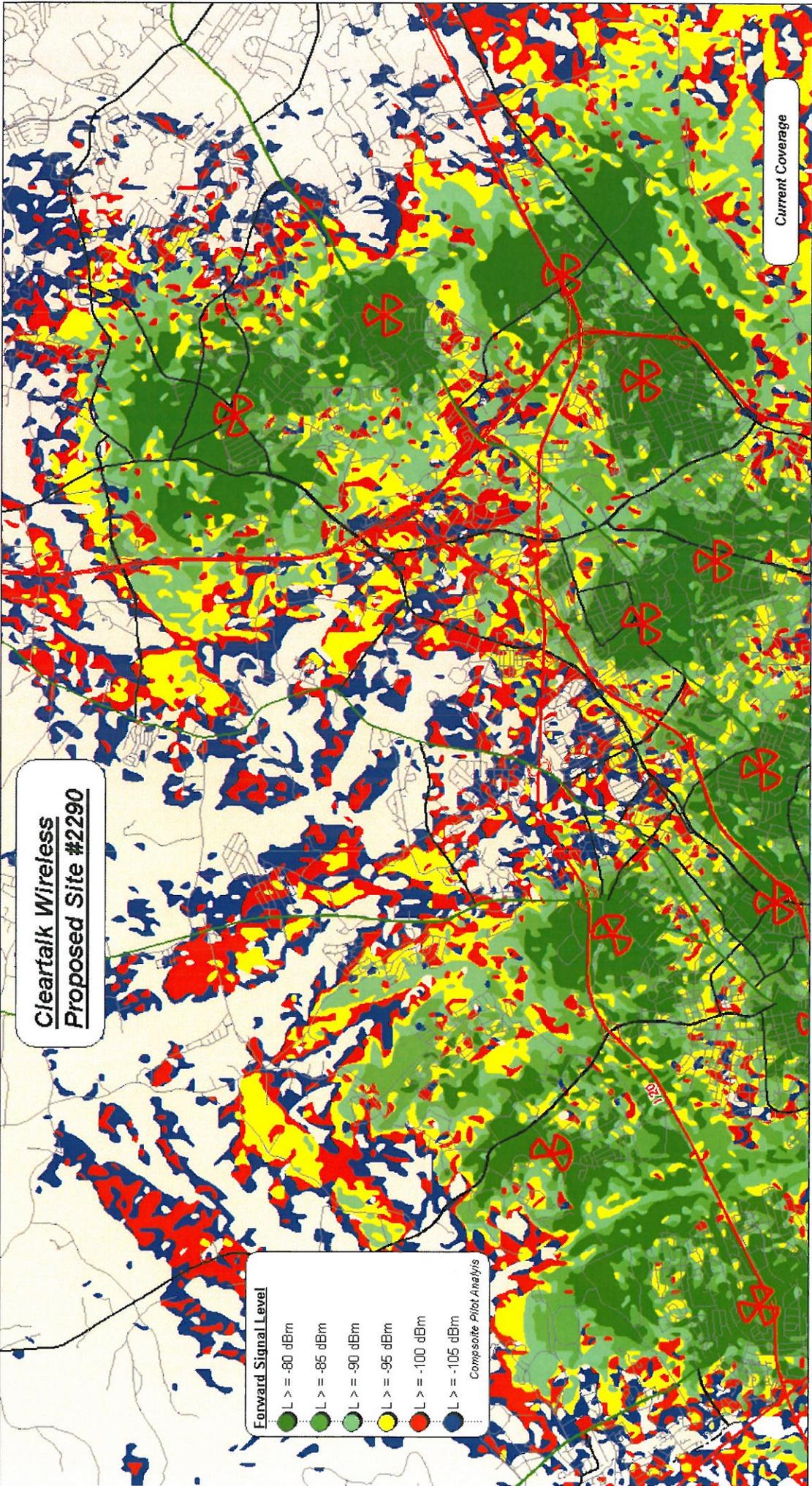
Because the neighboring sites, American Tower Company's 'North East Columbia' and ATC's 'Winnsboro' collocations in particular, have been leased, constructed, and are currently broadcasting, little leeway exists for a compromise on the location and height of the Wilson Blvd proposal. If the site shifts much to the east call drops will remain at a high rate and terrain shadowing will reduce in-building penetration to the homes south of I20. Movement west will interfere with the signal produced by the on-air site located off of Fairfield Road. As vital to the network as site location is, obtaining the proper verticality is just as important. To lower the proposed antenna centerline from 180' would substantially weaken the signal produced by the Wilson Blvd site. All objects within the same horizontal plane are considered 'clutter' because they seriously attenuate the signal produced by the antennas. Clutter (bill boards, retail signage, etc.), common in urban areas like that around the Wilson Blvd site, is extremely effective in attenuating AWS wavelengths. If forced to penetrate through the clutter rather than down upon it, the propagation from the antennas will be considerably degraded. To offer in building coverage with such a poor quality signal would be impossible. A 180' antenna centerline on the Wilson Blvd site helps mitigate this issue and will allow the proposed site to meet the design objectives by providing coverage to a very substantial area. The Wilson Blvd site is an essential component in the grid of sites providing quality coverage in the county of Richland. Any network without solid coverage along Richland County's major arteries and residential areas would be unacceptable – hence the ClearTalk Wireless network will not remain commercially viable without this site. No towers in the vicinity of the proposed Wilson Blvd site could have been considered as viable candidates based upon the location as the nearest existing structure is more than .4 miles from the proposed site and the maximum height on the city of Columbia water tower would not be able to provide the necessary coverage.

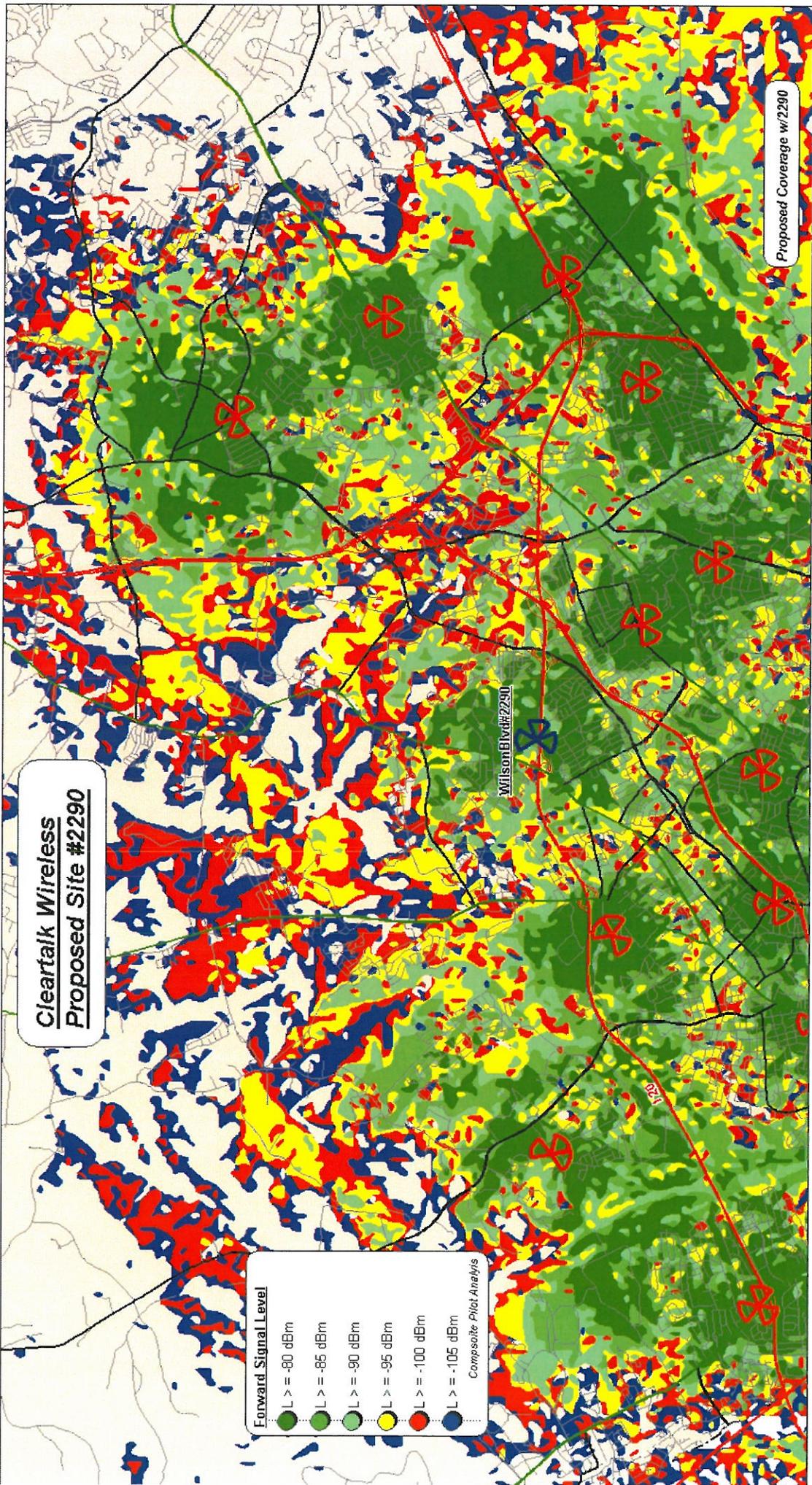
In summary, the Wilson Blvd site is necessary in allowing Cleartalk Wireless to provide continuous quality coverage in the County of Richland. Alternatives have been investigated and eliminated. The proposed site meets all engineering, interference and collocation constraints.

Sincerely,

William Howard  
RF Design Engineer  
Cleartalk Wireless







**Exhibit E**

**REFERENCE COPY**

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



**Federal Communications Commission  
Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: WGH COMMUNICATIONS, INC.

ATTN: PRESIDENT  
WGH COMMUNICATIONS, INC.  
703 PIER AVE #B  
PO BOX PME #313  
HERMOSA BEACH, CA 90254

Call Sign WQGD591	File Number
Radio Service AW - AWS, 1710-1755/2110-2155 MHz bands	

FCC Registration Number (FRN): 0021008966

Grant Date 12-18-2006	Effective Date 04-11-2009	Expiration Date 12-18-2021	Print Date
Market Number BEA024	Channel Block C	Sub-Market Designator 0	
Market Name Columbia, SC			
1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

**Waivers/Conditions:**

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

## EXHIBIT F

9/28/12

TOWAIR Search Results

### 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	34-04-28.6 north
Longitude	080-59-38.6 west

##### Measurements (Meters)

Overall Structure Height (AGL)	59.4
Support Structure Height (AGL)	59.4
Site Elevation (AMSL)	84.1

##### Structure Type

LTOWER - Lattice Tower

#### Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

**DoD Preliminary Screening Tool**

**Disclaimer:**

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

**Instructions:**

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  - Air Defense and Homeland Security radars(Long Range Radar)
  - Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  - Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

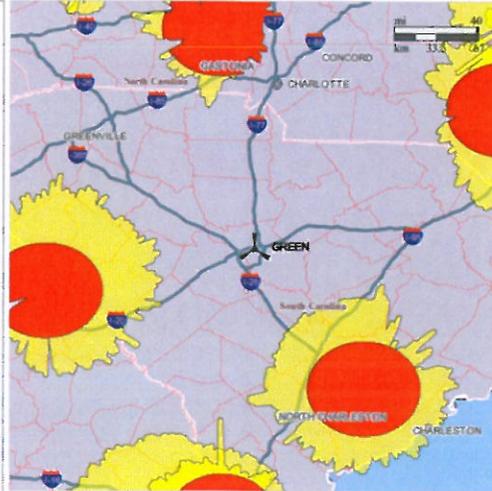
Screening Types:  Geometry Types:

Point	Latitude				Longitude			
	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	34	04	28.8	N	80	59	28.8	W

Horizontal Datum:

**Map Legend:**

- Green:** No anticipated impact to Air Defense and Homeland Security radars. Aeronautical study required.
- Yellow:** Impact likely to Air Defense and Homeland Security radars. Aeronautical study required.
- Red:** Impact: highly likely to Air Defense and Homeland Security radars. Aeronautical study required.





DoD Preliminary Screening Tool

**Disclaimer:**

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filings. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is 100% optional and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. The use of this tool does not in any way replace the official FAA processes/procedures.

**Instructions:**

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  - Air Defense and Homeland Security radars(Long Range Radar)
  - Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  - Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Types:  Geometry Types:

Point	Latitude				Longitude			
	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	34	04	28.6	N	80	50	28.6	W

Horizontal Datum:

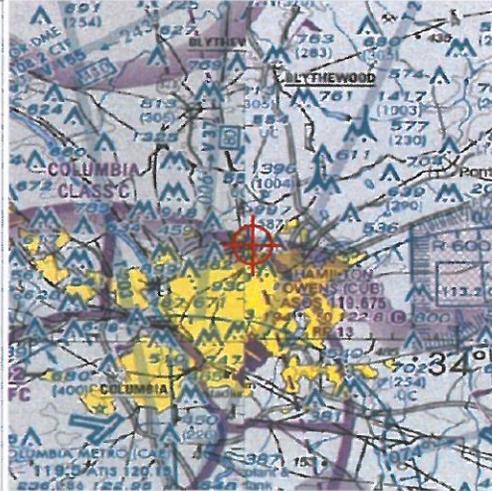
The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact David Brentzel at the USAF Regional Environmental Coordinator at (404)562-4211 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact the US Navy Representative, FAA Eastern Service Area at the USN Regional Environmental Coordinator at (404) 305-6906 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact LTC Jeffrey Martuscelll at the USA Regional Environmental Coordinator at (404) 305-6915 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact the US Marine Corps Representative, FAA Eastern Service Area at the USMC Regional Environmental Coordinator at (404) 305-6907 for confirmation and documentation.

**This is a preliminary review of your proposal and does not preclude official FAA processes.**  
Your search data is not retained and the privacy of all your searches is assured.



Any questions interpreting the map, please email Steve Sample with your questions and phone number at [steven.sample@airington.af.mil](mailto:steven.sample@airington.af.mil)

## EXHIBIT F

9/28/12

TOWAIR Search Results

### 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	34-04-28.6 north
Longitude	080-59-38.6 west

##### Measurements (Meters)

Overall Structure Height (AGL)	59.4
Support Structure Height (AGL)	59.4
Site Elevation (AMSL)	84.1

##### Structure Type

LTOWER - Lattice Tower

#### Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

**DoD Preliminary Screening Tool**

**Disclaimers**

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

**Instructions:**

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  - Air Defense and Homeland Security radars(Long Range Radar)
  - Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  - Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Type:  Geometry Type:

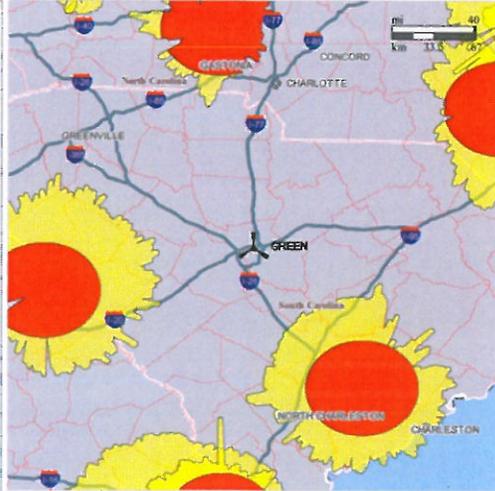
Point Latitude Longitude

Point	Lat	Min	Sec	Dir	Lon	Min	Sec	Dir
1	34	04	28.8	N	80	58	28.8	W

Horizontal Datum:

**Map Legend:**

- Green:** No anticipated impact to Air Defense and Homeland Security radars. Aeronautical study required.
- Yellow:** Impact likely to Air Defense and Homeland Security radars. Aeronautical study required.
- Red:** Impact highly likely to Air Defense and Homeland Security radars. Aeronautical study required.





Federal Aviation Administration

OE/AAA

DoD Preliminary Screening Tool

**Disclaimer:**

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is 100% optional and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. The use of this tool does not in any way replace the official FAA processes/procedures.

**Instructions:**

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  - Air Defense and Homeland Security radars(Long Range Radar)
  - Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  - Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

Screening Type:  Geometry Type:

Point Latitude Longitude

	Deg	Min	Sec	Dir	Deg	Min	Sec	Dir
1	34	04	28.8	N	80	50	26.8	W

Horizontal Datum:

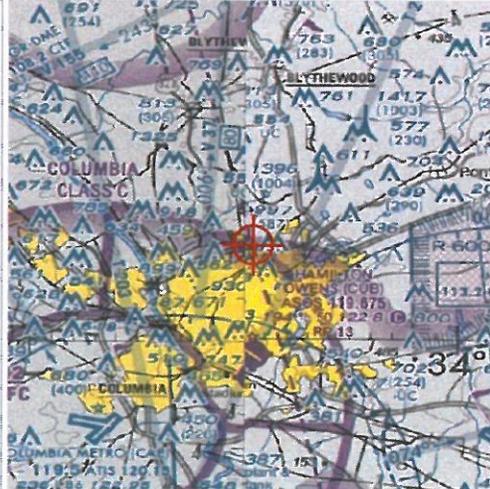
The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact David Brentzel at the USAF Regional Environmental Coordinator at (404)562-4211 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact the US Navy Representative, FAA Eastern Service Area at the USN Regional Environmental Coordinator at (404) 305-6906 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact LTC Jeffrey Martuscell at the USA Regional Environmental Coordinator at (404) 305-6915 for confirmation and documentation.

The preliminary review of your proposal does not return any likely impacts to military airspace. Please contact the US Marine Corps Representative, FAA Eastern Service Area at the USMC Regional Environmental Coordinator at (404) 305-6907 for confirmation and documentation.

**This is a preliminary review of your proposal and does not preclude official FAA processes.**  
Your search data is not retained and the privacy of all your searches is assured.



Any questions interpreting the map, please email Steve Sample with your question/s and phone number at [steven.sample@pentagon.af.mil](mailto:steven.sample@pentagon.af.mil)





**Richland County Government**  
2020 Hampton Street  
Columbia, SC 29204

Phone (803) 576-2180  
Fax (803) 576-2182

---