

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Carolina Christian Broadcasting, Inc.	)	MB Docket No. 23-_____
	)	RM-_____
Petition for Rulemaking to Amend the DTV	)	
Table of Allotments for	)	
	)	
Station WGGG-TV, Greenville, SC (FID 9064)	)	

**PETITION FOR RULEMAKING**

Carolina Christian Broadcasting, Inc. (“CCB”), licensee of television station WGGG-TV, Greenville, South Carolina (“WGGG”), hereby petitions the Commission to commence a rulemaking pursuant to Section 1.401 of the Commission’s rules<sup>1</sup> to amend the digital television Table of Allotments by allotting Channel 29 to Greenville, South Carolina for WGGG in lieu of its current Channel 2.<sup>2</sup> Moving from a VHF to a UHF channel would significantly improve reception of WGGG’s over-the-air signal by viewers in the Greenville market.

The proposed channel substitution would serve the public interest by addressing ongoing reception complaints WGGG has received from viewers, allowing WGGG to better compete for viewers with the other television stations in the market<sup>3</sup> and enabling WGGG to better serve the Greenville, South Carolina community by substantially improving access to its family oriented educational, spiritual, religious and other programming. In addition, the proposed substitution will make it possible to deliver ATSC 3.0 services to viewers who are traveling in a vehicle carrying (or equipped with) ATSC 3.0 reception equipment, such as a cell phone, smart pad, or

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<sup>1</sup> 47 C.F.R. § 1.401.

<sup>2</sup> 47 C.F.R. § 73.622(i).

<sup>3</sup> WGGG is the only “low-V” full power television station in the Greenville-Spartanburg-Asheville Television market. See <http://www.biakelsey.com/research-data/broadcast-center/station-search/>.

TV.

### **Background**

WGGG is licensed to Greenville, South Carolina, broadcasting on VHF Channel 2. The Commission has recognized that “VHF channels have certain characteristics that have posed challenges for their use in providing digital television service,” including “propagation characteristics of these channels [that] allow undesired signals and noise to be receivable at relatively farther distances,” the tendency of “nearby electrical devices ... to emit noise in this band that can cause interference,” and the fact that “reception of VHF signals requires physically larger antennas that are generally not well suited to the mobile applications expected under flexible use, relative to UHF channels.”<sup>4</sup>

The Commission has further noted that independent studies by a private engineering firm and the Commission’s own staff both found “large variability in the performance (especially intrinsic gain) of indoor antennas available to consumers, with most antennas receiving fairly well at UHF and the substantial majority not so well to very poor at high-VHF” and that it is expected “that the reception capabilities of an indoor antenna at low-VHF will generally be less than at high-VHF.”<sup>5</sup> The Commission continues to recognize that, although VHF reception issues are not universal, “environmental noise blockages affecting [VHF] signal strength and reception exist” and “[vary] widely from service area to service area.”<sup>6</sup>

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<sup>4</sup> Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF, NPRM, 25 FCC Rcd 16498, 16511 ¶ 42 (2010) (“VHF Improvements NPRM”).

<sup>5</sup> Id. at 16512 ¶ 44. See also Amendment of Parts 73 and 74 of the Commission’s Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations, Second R&O, 25 FCC Rcd 10732, 10750 ¶ 37 (2011) (“As a result of the full power digital television transition, some full power stations on VHF channels have experienced reception problems and such problems have not been alleviated even by allowing these stations to operate with the maximum power permitted under the full power television rules.”).

<sup>6</sup> Assessment and Collection of Regulatory Fees for Fiscal Year 2020, MD Docket No. 20-105, FCC 20-64, at ¶ 52 (rel. May 13, 2020).

These findings aptly describe WGGG's experience. WGGG's office manager regularly receives phone calls from viewers no longer able to receive the station.<sup>7</sup> Viewers email the station and comment on social media about reception issues as well. Several examples are provided at Exhibit A, but comments such as "*I am local here in Greenville S.C. and I have always received WGGG and all of its sub channels perfect with my excellent roof antenna. I can no longer receive any WGGG channel 16 and any of its sub channels*" are typical.<sup>8</sup> The comments from viewers are persistent, not anecdotal or isolated. WGGG often has no solution to offer viewers with reception problems, and believes it has lost thousands of viewers as a result.

These propagation problems and the inevitable inability to receive WGGG's VHF signal on mobile devices for technical reasons<sup>9</sup> put WGGG at a distinct competitive disadvantage to the other stations broadcasting in the Greenville market. WGGG's coverage area population count, predicated on unobstructed reception by an outdoor antenna at 30 feet, bears little relation to the reality of a shrinking number of viewers that can actually reliably receive its over-the-air signal. In the end, the public loses because it has one less viewing choice, and a valuable independent broadcast television station offering wholesome family, spiritual and religious programming is slowly sidelined because of the technical characteristics of WGGG's assigned VHF channel.

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<sup>7</sup> See Exhibit A.

<sup>8</sup> *Id.*

<sup>9</sup> See Dru Sefton, "Prompted by auction sales, moves to low VHF bring both challenges and advantages," Current, <https://current.org/2017/04/prompted-by-auction-sales-moves-to-low-vhf-bring-both-challenges-and-advantages/>; See also National Association of Broadcasters, Next Generation Television (ATSC 3.0) Station Transition Guide, at 8 (April 2019), [https://nabpilot.org/wp-content/uploads/2019/04/NAB-ATSC-3.0-Guide\\_Final.pdf](https://nabpilot.org/wp-content/uploads/2019/04/NAB-ATSC-3.0-Guide_Final.pdf) ("Performance of VHF channels 7 through 13 is better than low-band VHF, but the longer wavelength of VHF reduces the chances of successful reception for many portable use cases, due to utilization of built-in antennas in these devices," while "[d]ue to the short wavelengths and resulting reception advantages in this part of the TV spectrum, UHF is suitable for all anticipated ATSC 3.0 service models.").

### **The Proposed Channel Substitution Would Improve Service to Local Viewers**

Today, over-the-air coverage is increasingly important as more American households cut the cord on traditional cable and satellite services.<sup>10</sup> These households are choosing to rely on free local broadcast signals, often in combination with some online streaming services.

According to Nielsen, nationwide “[t]he percent of homes without traditional cable (wired or satellite) that receive local broadcast stations on a TV set via some form of digital antenna has increased 48%” between May 2010 and May 2018, rising from 11 million such homes (representing 9 percent of TV homes) to 16 million such homes (representing 14 percent of TV homes).<sup>11</sup> About 6.6 million of these homes do not subscribe to any online streaming services, thus relying entirely on over-the-air broadcasts for video service.<sup>12</sup>

The COVID-19 pandemic, which drove a dramatic surge in viewership of local and national broadcast television newscasts, only underscores the key role that free, over-the-air broadcast TV coverage plays in making crucial information broadly accessible to communities.<sup>13</sup>

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<sup>10</sup> Jon Lafayette, “Cord-Cutting Hit Record Levels in First Quarter,” *Broadcasting + Cable*, <https://www.broadcastingcable.com/news/cord-cutting-hit-record-levels-in-first-quarter> (May 8, 2020); Aaron Pressman, “Cord cutting is speeding up as the coronavirus pandemic squeezes consumers,” *Fortune*, <https://fortune.com/2020/05/05/cord-cutting-coronavirus-cable-satellite-tv-comcast-verizon-charter-altice-att-dish/> (May 5, 2020). Purchasing an over-the-air antenna able to receive high or low VHF signals is a separate challenge, further limiting reception of VHF channels even by cord-cutting consumers.

<sup>11</sup> The Nielsen Company (US), LLC, *The Nielsen Local Watch Report: The Evolving Over-the-Air Home*, at 4 (2019), available at <https://www.nielsen.com/us/en/insights/report/2019/nielsen-local-watch-report-the-evolving-ota-home/>

<sup>12</sup> *Id.* at 5.

<sup>13</sup> See Ted Johnson, “As Viewers Flock Back To Evening Newscasts During Coronavirus Crisis, ‘World News Tonight’ Reaches Ratings Milestone,” *Deadline*, <https://deadline.com/2020/05/abc-world-news-tonight-david-muir-ratings-coronavirus-1202926423/> (May 5, 2020); “Comscore figures reveal surging levels of Coronavirus TV coverage driven by diverse audience,” Comscore, <https://www.comscore.com/Insights/Press-Releases/2020/4/Surging-levels-of-Coronavirus-local-TV-coverage> (April 7, 2020); Stephen Battaglio, “A hunger for information is driving TV news to peak levels,” *Los Angeles Times*, <https://www.latimes.com/entertainment-arts/business/story/2020-03-25/tv-news-audiences-are-surging-thanks-to-coronavirus-pandemic> (March 25, 2020). 22 Nielsen OTA Report at 18 (showing percentage of OTA homes in Local People Meter (“LPM”) markets); *id.* at 25 (identifying LPM markets as the top 25 DMAs).

These significant trends underscore the need for WGGG to have a signal that can be reliably received by the public. The station's engineering exhibit, attached hereto as Exhibit B (the "Engineering Statement"), confirms that with WGGG's proposed three-node DTS parameters, Channel 29 can be substituted for Channel 2 at Greenville, South Carolina, in compliance with the Commission's rules. The study shows that the proposed facility would continue to provide a principal community contour completely covering WGGG's community of license and would not cause impermissible interference to any station.

The Engineering Statement also confirms that WGGG's Channel 29 contour would be fully contained within the station's existing Channel 2 contour and would continue to reach a substantial portion of the population within the station's current service area, including fully covering the City of Greenville. While an analysis using the Commission's *TVStudy* tool indicates that WGGG's move from Channel 2 to Channel 29 would create a predicted population loss area, almost every one of the people within the loss area remain "well-served," meaning they would continue to have access to at least five full power or Class A television signals.<sup>14</sup> Only a *de minimis* 417 people are predicted to live in portions of a small new loss area that would not otherwise be well-served, and even those viewers would not lose access to their only over-the-air television service.<sup>15</sup>

Here, given the persistent feedback WGGG has received about reception issues within the

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<sup>14</sup> See Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, NPRM, 22 FCC Rcd 9478, 9493 ¶ 38 (2007) ("The Commission is generally most concerned where there is a loss of an area's only network or NCE TV service, or where the loss results in an area becoming less than well served, i.e., served by fewer than five full-power over-the-air signals.") (footnotes and citations omitted) ("Third DTV Review NPRM"). Although Class A stations operate under low power technical rules, they have the same primary status and public service obligations as full power stations, and their signals thus should be counted like those of full power stations when determining if an area is well served. See 47 C.F.R. §§ 73.6001, 73.6026. Notably, no white or gray areas are created by the proposed move of WGGG from channel 2 to 29.

<sup>15</sup> See Exhibit Q within the Engineering Statement.

station's core coverage area, the population loss in outlying areas of the station's contour is more than outweighed by the substantial improvement in the station's actual over-the-air reception within its community of license and in other core portions of its service area. The proposed move to Channel 29 would therefore serve the public interest by giving Greenville-area residents greater, more reliable access to WGGs's free over-the air signal, with virtually no viewers losing access to robust over-the-air service.

### **Conclusion**

Allowing a substitution of UHF channel 29 in place of WGGs's VHF channel 2 will have immediate public interest benefits by ensuring reliable and robust reception of WGGs's programming, preserving an important independent broadcast voice in the Greenville-Spartanburg television market.

Respectfully Submitted

**CAROLINA CHRISTIAN BROADCASTING, INC.**

\_\_\_\_\_/s/\_\_\_\_\_  
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Dated: September 26, 2023  
*Its Counsel*

# Exhibit A

## Viewer Complaints



Executive Office: P.O. Box 1616 • Greenville, S.C. 29602

August 14, 2023

To Whom it may concern,

For the past five years here at Carolina Christian Broadcasting, I've received anywhere from 10-20 calls, possibly more, regarding Viewers not being able to watch us on television.

Please do not hesitate to contact me at 864-244-1616 if I can be of further assistance.

Sincerely,

Pamela Brown

Office Manager

CCB/Dove Broadcasting



**EMAIL: From: Mykel USA**

Date: Fri, Feb 17, 2023 at 2:32 PM

Subject: WGGG Channel 16 Over The Air Reception Problems

I am local here in Greenville S.C. and I have always received WGGG and all of its sub channels perfect with my excellent roof antenna. I can no longer receive any WGGG channel 16 and any of its sub channels. I still receive all of my other over the air channels just fine. What happened to your station? Did you stop broadcasting over the air here in Greenville? Please let me know and thanks ... Michael in Greenville S.C. ...

**Voicemail: Monday, February 27, 2023**

Hello. My name is George [REDACTED], and my wife and I live up here in Lyman. And we're just wondering why some days like today, we can't get any of the 16 channels one through 11. We've been watching Court TV, but today we can't get any of the channels. Most days we can get a couple of them. And some days like today, we can't get any, and other days we can get all of them. We've wondered if you're working on your transmitter or or is there something we could do to bring the signal in? Better if you just let us know. 8646216750. Thank you.

**From Facebook: Jun 14, 2023, 4:15 PM - Loyd [REDACTED]**

Ok thanks I just been trying to get your station and can't get even a smidgen of signal. I have an antenna that I have taken apart and cleaned all the connectors and I also added a few extra elements cut to low vhf frequency and from over here in Franklin county Ga I can wlos 74 miles away and wyff 59 miles away and whns 61 miles away and then I can't get 16 which is 58 miles away and I understand about obstructions because I used to work with TVs and antennas in the old days. It may just be that 33 kw is not sufficient. Even though I am working with a recycled antenna, it's a better antenna than anything you can buy for \$250 and certainly better than the ones pictured on your website. Oh yes the distances I am quoting are from my house to transmitters.

**From Facebook: Willard [REDACTED] 6/7/22, 8:32 AM**

We have over the airwaves tv only thing available in our area of Edneyville NC.

We have watched for years. But lately unbearable- garbled and digitally scrambled. Every word breaks up. Hope you fix it soon.

Thank you

**from Facebook: Dawn [REDACTED] 1/17/21, 8:23 PM**

Your channel stays out more than on in our antenna. Are you having technical difficulties? If yes When will they be fixed? We live in the anderson area .

**From Facebook: Amy [REDACTED] 10/31/20, 4:45 PM**

I was wondering why I can't receive your channel thru antenna...we haven't been able to receive it for more than a year....I live in liberty....thanks...

**From Facebook:** Karen [REDACTED] 10/20/19, 10:43 PM

We still can not pick up your station. We had several different 16's before everyone was forced to move frequencies. I have rescanned every week. Please let me know if you all are back to full power yet. Missing you all.

**From Facebook:** Cecil [REDACTED] 10/14/19, 6:16 PM

Good evening and it's with a very downhearted spirit that I come to you at this time because we in the Pendelton SC area who have to rely on Free over the air antennas can not receive channel 16 at this time! Due to that fact you have lost about 1000 viewers! Please let me know if you are going to be able to resolve this problem! Have a great night and bye bye for now.

# Exhibit B

## Engineering Statement

**ENGINEERING STATEMENT**

The engineering data contained herein have been prepared on behalf of CAROLINA CHRISTIAN BROADCASTING, INC., licensee of full-power digital television station WGGS-TV, Channel 2 in Greenville, South Carolina, in support of its Petition for Rulemaking to substitute digital Channel 29 for Channel 2 for operation by WGGS-TV. As part of this petition, we propose to operate the station with a 3-node Distributed Transmission System (DTS). The proposed DTS reference coordinates will be those of the presently licensed WGGS-TV Channel 2 transmitter site.

We will now describe each Single Frequency Network (SFN) node separately and then treat the entire DTS facility as a whole.

**GREENVILLE NODE (WGGS-TV DTS-1)**

The proposed DTS-1 transmitter site is the same as that licensed to WGGS-TV in LMS-0000084134. It is intended to mount a Dielectric TLP-32TLP(C)/VP elliptically-polarized directional antenna at the 45.1 meter level of the 56.4-meter tower on which the licensed WGGS-TV Channel 2 antenna is mounted. The effective radiated power for the proposed Channel 29 facility is 125 kW in the horizontal plane.

Below are proposed operating parameters for the Greenville SFN node (DTS-1) on Channel 29:

**EXHIBIT A**

Site coordinates: 34-56-26.4 N, 82-24-40.4 W (NAD83)

Site elevation: 615.0 meters AMSL

Overall tower height: 56.4 meters AMSL

FCC Antenna Structure Registration Number: none

Antenna height above ground: 45.1 meters

Antenna height above mean sea level: 660.1 meters

Antenna height above average terrain: 352 meters

Antenna make/model: Dielectric TLP-32TLP(C)/VP

Polarization: Elliptical

FCC Antenna ID Number: to be determined

Antenna orientation: 180 degrees true

Electrical beam tilt: 1.5 degrees

Effective radiated power: 125 kW

Exhibit B is a map upon which the predicted service contours are plotted. As shown, the community of licensed, Greenville, South Carolina, is completely encompassed by the proposed 48 dBu city-grade service contour. Azimuth and elevation pattern data for the proposed antenna are provided in Exhibit C. A power density calculation appears as Exhibit D.

Since no change in the overall height or location of the existing WGGs-TV tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, due to the diminutive height of the tower and its proximity to the nearest airport runway, no FCC Antenna Structure Registration is required for this tower. This conclusion is supported by the Commission's TOWAIR software.

**EXHIBIT A**

**ELBERTON, GEORGIA, NODE (WGGS-TV DTS-2)**

It is proposed to mount a Dielectric TUA-TU-02/04L-T directional panel antenna at the 50.7-meter level of an existing 121.9-meter tower located near Hartwell, Georgia. The proposed effective radiated power for the facility will be 3.0 kW in the horizontal plane. Below are the proposed operating parameters for the WGGS-TV Elberton DTS-2 node on Channel 29:

Site coordinates: 34-18-45.0 N, 82-56-15 W (NAD83)  
Site elevation: 249.3 meters AMSL  
Overall structure height: 121.9 meters AMSL  
FCC Antenna Structure Registration Number: 1018778  
Antenna height above ground: 50.7 meters  
Antenna height above mean sea level: 300 meters  
Antenna height above average terrain: 81.6 meters  
Antenna make/model: Dielectric TUA-TU-02/04L-T  
FCC Antenna ID Number: To Be Determined  
Antenna orientation: 225 degrees  
Polarization: Horizontal  
Electrical beam tilt: none  
Effective radiated power: 3.0 kW

Exhibit E is a map upon which we have plotted the predicted service contours of the WGGS-TV DTS-2 node. Azimuth and elevation pattern data for the proposed Dielectric antenna are provided in Exhibit F, and detailed power density calculation appears in Exhibit G.

**EXHIBIT A**

Since no change in the overall height or location of the existing communications tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1018778 to this tower.

**HOLLINGSWORTH, GEORGIA, NODE (WGGS-TV DTS-3)**

It is proposed to mount a Dielectric TUA-C1A directional panel antenna at the 20-meter level of an existing 184.1-meter tower located near Toccoa, Georgia. The proposed effective radiated power for the facility will be 0.2 kW in the horizontal plane. Below are the proposed operating parameters for the WGGS-TV Hollingsworth DTS-3 node on Channel 29:

Site coordinates: 34-36-35.7 N, 83-22-14.3 W (NAD83)

Site elevation: 434.3 meters AMSL

Overall structure height: 184.1 meters AMSL

FCC Antenna Structure Registration Number: 1018908

Antenna height above ground: 20 meters

Antenna height above mean sea level: 454.3 meters

Antenna height above average terrain: 98.9 meters

Antenna make/model: Dielectric TUA-C1A

FCC Antenna ID Number: To Be Determined

Antenna orientation: 220 degrees

Polarization: Horizontal

Electrical beam tilt: none

Effective radiated power: 0.2 kW

Exhibit H is a map upon which we have plotted the predicted service contours of the WGGG-TV DTS-3 node. Azimuth and elevation pattern data for the proposed Dielectric antenna are provided in Exhibit I, and detailed power density calculation appears in Exhibit J.

Since no change in the overall height or location of the existing communications tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1018908 to this tower.

#### **PROPOSAL MEETS THE REQUIREMENTS OF THE FCC'S DTS RULES**

The proposed WGGG-TV Channel 29 facility meets all of the requirements of Section 73.626(f) of the Commission's DTS Rules based on the following analysis.

Exhibit K is a map on which we have plotted the noise-limited, dipole-adjusted F(50,90) coverage contours of the three SFN nodes in the proposed Channel 29 WGGG-TV DTS facility. As shown, each node's contour overlaps the contour of one other facility in the system. In addition, in Exhibit B we plotted the 48 dBu city-grade coverage contour resulting from the DTS-1 (Greenville) node. As shown in that exhibit, the community of license, Greenville, South Carolina, lies within that contour.

In Exhibit L, we have plotted the transmitter sites of the three DTS nodes in relation to an arc originating from the WGGG-TV DTS reference site and defined as the F(50,90) 103-kilometer arc as provided in the FCC's Table of Distances for UHF DTS facilities. As shown, all three of the DTS nodes have transmitter sites located within the referenced arc.



EXHIBIT A

The new DTS Rules recently adopted by the Commission state that the noise-limited dipole-adjusted F(50,50) contour of a UHF SFN node must be located within an F(50,50)-based arc originating from the DTS reference site. The FCC's F(50,50) Table of Distances arc for UHF television stations has a radius of 142 kilometers. The map in Exhibit M shows that all of the proposed Channel 29 WGGG-TV SFN nodes have noise-limited dipole-adjusted 40.23 dBu F(50,50) service contours that are completely contained within that allowable reference arc.

The newly adopted Rules also require that the 26.8 dBu F(50,10) contours of the DTS nodes be located within an interference F(50,10)-based arc from the reference site. According to the Commission's Table of Distances for UHF DTS stations, this arc has a radius of 246 kilometers. We provide a map in Exhibit N that attests to the fact that each of the proposed WGGG-TV SFN nodes have 26.8 dBu F(50,10) interference contours that are completely contained within the above-defined reference arc.

In Exhibit O, we provide the summary results from a TVStudy interference analysis, which was conducted using a cell size of 1.0 kilometer as well as an increment spacing of 0.1 kilometer. It concludes that, with respect to outgoing interference, the proposed WGGG-TV DTS facility on Channel 29 meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel full-power and Class A facilities.

It is important to note that the interference study indicates that the newly proposed WGGG-TV DTS facility would receive predicted interference to 4.88% of its service population. That interference is hereby accepted by WGGG-TV and can be ignored.

**LOSS AREA ANALYSIS**

We have analyzed the area and population that is presently located within the licensed WGGG-TV Channel 2 service contour and located outside the proposed Channel 29 service contour. This will be referred to as “contour-based loss area”.

Exhibit P is a map upon which we have plotted the 28 dBu service contour of the present WGGG-TV Channel 2 facility in relation to the 40.23 dBu noise-limited, dipole-adjusted digital service contours for the proposed DTS facility on Channel 29. As shown, there is a strip of loss area located around the majority of the Channel 2 contour boundary. According to the 2020 U.S. Census, there are 946,964 people living within the contour-based loss area.

Exhibit Q is the same map upon which we have plotted the service contours of all full-power and Class A stations that overlap some or all of the loss area.

Exhibit R is a list of the other stations we included in this part of our study. It is important to note that the following stations have channel sharing agreements, and therefore constitute two individual and independent programming streams rather than one:

Call Sign	City, State		Call Sign	City, State
WCWG(TV)	Lexington, NC	with	WXII-TV	Winston-Salem, NC
WYCW(TV)	Asheville, NC	with	WSPA-TV	Spartanburg, SC
WAGV(TV)	Harlan, KY	with	WLFG(TV)	Grundy, VA
WRET-TV	Spartanburg, SC	with	WNTV(TV)	Greenville, SC
WMYT-TV	Rock Hill, SC	with	WNSC-TV	Rock Hill, SC

EXHIBIT A

We have determined that the entire loss area, with the exception of a tiny area on the southwestern edge of the Channel 2 service contour, lies within the service contours of at least five other stations, and in most cases, significantly more than five service contours. Based on the Commission's own analysis, there are only 417 people currently residing in this underserved area.

As a result, the Commission considers the vast majority of the loss area created by the channel-change proposal to be "adequately served" by other stations, thus minimizing the impact to viewers of the change in WGGs-TV operation from Channel 2 to Channel 29. And, the underserved area population (417 people) is considered *de minimis* according to current Commission standards.

I declare under penalty of perjury that the foregoing statements and the attached engineering exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher", with a stylized flourish at the end.

KEVIN T. FISHER

September 18, 2023



**SMITHANDFISHER**

**FCC CITY-GRADE  
CONTOUR**

WGGS-TV DTS-1

**EXHIBIT B**  
**PREDICTED SERVICE CONTOURS**  
**PROPOSED WGGS-TV DTS-1 FACILITY**  
**CH.29 - GREENVILLE, SOUTH CAROLINA**

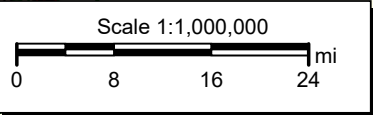


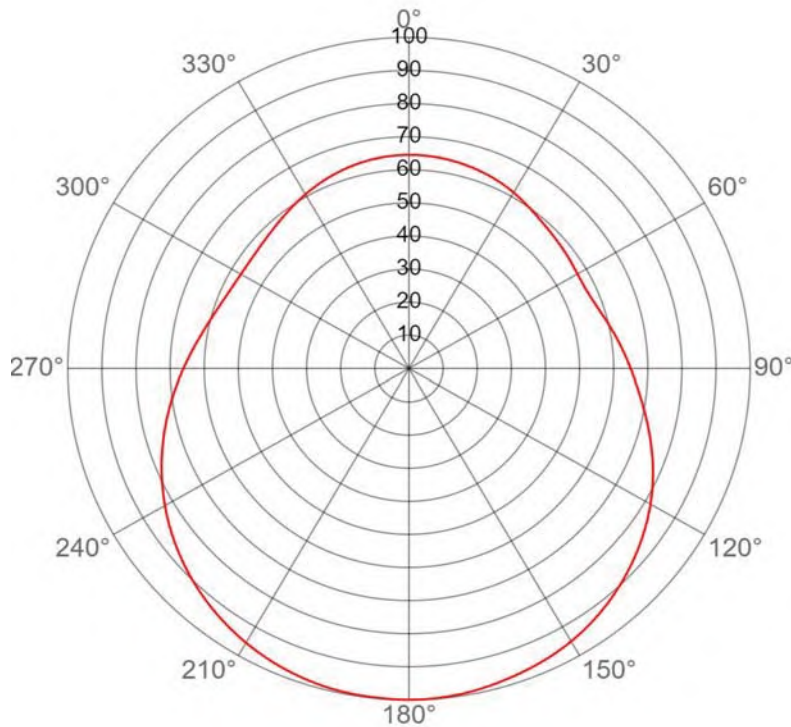
EXHIBIT C**Horizontal Polarization  
AZIMUTH PATTERN**

Exhibit No.

Date **20 Jul 2023**

Call Letters

Channel **29**Antenna Type **TLP-32TLP (C)/VP**

Location

Customer

Gain **1.7 (2.30 dB)****Calculated**Drawing # **TLP-B**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.645	36	0.600	72	0.584	108	0.747	144	0.930	180	1.000	216	0.935	252	0.759	288	0.589	324	0.594
1	0.645	37	0.598	73	0.587	109	0.753	145	0.934	181	1.000	217	0.932	253	0.754	289	0.586	325	0.596
2	0.645	38	0.596	74	0.590	110	0.759	146	0.938	182	0.999	218	0.928	254	0.748	290	0.583	326	0.598
3	0.645	39	0.594	75	0.593	111	0.765	147	0.941	183	0.999	219	0.924	255	0.742	291	0.581	327	0.600
4	0.645	40	0.592	76	0.596	112	0.771	148	0.944	184	0.999	220	0.920	256	0.737	292	0.579	328	0.603
5	0.644	41	0.590	77	0.600	113	0.777	149	0.948	185	0.998	221	0.916	257	0.731	293	0.577	329	0.605
6	0.644	42	0.589	78	0.603	114	0.783	150	0.951	186	0.998	222	0.912	258	0.726	294	0.575	330	0.607
7	0.643	43	0.587	79	0.607	115	0.789	151	0.954	187	0.998	223	0.908	259	0.720	295	0.574	331	0.609
8	0.643	44	0.586	80	0.610	116	0.795	152	0.956	188	0.997	224	0.904	260	0.714	296	0.573	332	0.611
9	0.642	45	0.584	81	0.614	117	0.801	153	0.959	189	0.996	225	0.899	261	0.709	297	0.571	333	0.614
10	0.641	46	0.583	82	0.618	118	0.806	154	0.962	190	0.996	226	0.895	262	0.703	298	0.570	334	0.616
11	0.640	47	0.582	83	0.622	119	0.812	155	0.964	191	0.995	227	0.890	263	0.698	299	0.569	335	0.618
12	0.640	48	0.581	84	0.625	120	0.817	156	0.966	192	0.994	228	0.886	264	0.692	300	0.569	336	0.619
13	0.639	49	0.580	85	0.629	121	0.823	157	0.968	193	0.993	229	0.881	265	0.687	301	0.568	337	0.621
14	0.638	50	0.579	86	0.633	122	0.828	158	0.971	194	0.992	230	0.876	266	0.682	302	0.568	338	0.623
15	0.637	51	0.578	87	0.637	123	0.834	159	0.973	195	0.990	231	0.872	267	0.676	303	0.568	339	0.625
16	0.636	52	0.577	88	0.641	124	0.839	160	0.975	196	0.989	232	0.867	268	0.671	304	0.568	340	0.627
17	0.634	53	0.576	89	0.646	125	0.844	161	0.977	197	0.987	233	0.862	269	0.666	305	0.568	341	0.628
18	0.633	54	0.575	90	0.650	126	0.849	162	0.979	198	0.985	234	0.857	270	0.661	306	0.568	342	0.630
19	0.632	55	0.574	91	0.654	127	0.854	163	0.980	199	0.983	235	0.852	271	0.656	307	0.569	343	0.632
20	0.631	56	0.573	92	0.659	128	0.859	164	0.982	200	0.981	236	0.847	272	0.651	308	0.569	344	0.633
21	0.629	57	0.572	93	0.663	129	0.864	165	0.984	201	0.979	237	0.842	273	0.646	309	0.570	345	0.634
22	0.628	58	0.572	94	0.668	130	0.869	166	0.986	202	0.977	238	0.836	274	0.641	310	0.571	346	0.636
23	0.626	59	0.571	95	0.673	131	0.874	167	0.988	203	0.975	239	0.831	275	0.637	311	0.572	347	0.637
24	0.625	60	0.570	96	0.678	132	0.879	168	0.990	204	0.972	240	0.826	276	0.632	312	0.573	348	0.638
25	0.623	61	0.570	97	0.683	133	0.883	169	0.991	205	0.970	241	0.820	277	0.628	313	0.574	349	0.639
26	0.621	62	0.570	98	0.688	134	0.888	170	0.993	206	0.967	242	0.815	278	0.624	314	0.575	350	0.640
27	0.619	63	0.570	99	0.694	135	0.893	171	0.994	207	0.964	243	0.810	279	0.619	315	0.577	351	0.641
28	0.618	64	0.570	100	0.699	136	0.897	172	0.995	208	0.961	244	0.804	280	0.615	316	0.578	352	0.642
29	0.616	65	0.571	101	0.705	137	0.902	173	0.996	209	0.958	245	0.799	281	0.612	317	0.580	353	0.643
30	0.613	66	0.572	102	0.711	138	0.906	174	0.997	210	0.955	246	0.793	282	0.608	318	0.582	354	0.643
31	0.611	67	0.573	103	0.716	139	0.910	175	0.998	211	0.952	247	0.787	283	0.604	319	0.584	355	0.644
32	0.609	68	0.575	104	0.722	140	0.914	176	0.999	212	0.949	248	0.782	284	0.601	320	0.586	356	0.644
33	0.607	69	0.577	105	0.728	141	0.919	177	0.999	213	0.946	249	0.776	285	0.597	321	0.588	357	0.645
34	0.605	70	0.579	106	0.734	142	0.923	178	0.999	214	0.942	250	0.771	286	0.594	322	0.590	358	0.645
35	0.602	71	0.581	107	0.740	143	0.927	179	1.000	215	0.939	251	0.765	287	0.591	323	0.592	359	0.645

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## ELEVATION PATTERN

Exhibit No.

Date

20 Jul 2023

Call Letters

[EXHIBIT C](#)

Channel

29

Antenna Type

TLP-32TLP (C)/VP

Location

Customer

RMS Gain at Main Lobe

31.0 (14.91 dB)

Beam Tilt

1.5 Degrees

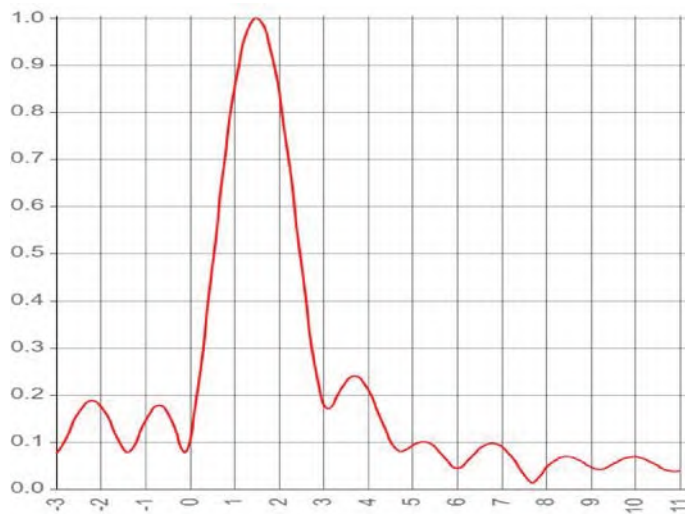
RMS Gain at Horizontal

0.3 (-4.83 dB)

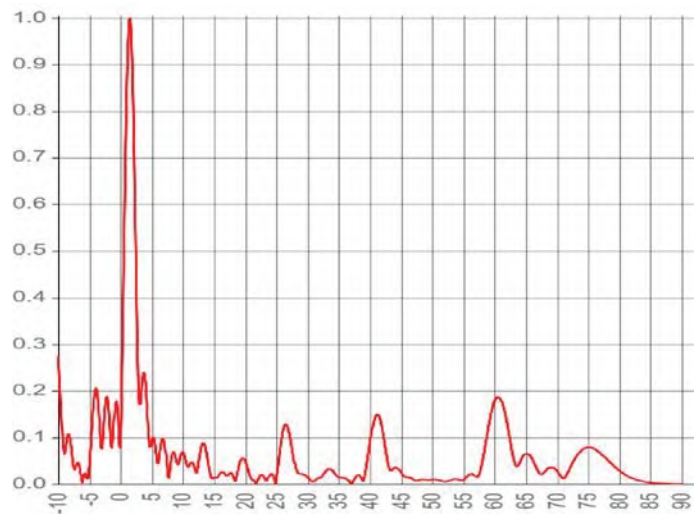
Drawing #

32L310150

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.275	10	0.069	30	0.015	50	0.010	70	0.028
-9	0.064	11	0.039	31	0.005	51	0.009	71	0.012
-8	0.088	12	0.027	32	0.014	52	0.005	72	0.032
-7	0.045	13	0.083	33	0.029	53	0.009	73	0.057
-6	0.009	14	0.051	34	0.029	54	0.010	74	0.074
-5	0.045	15	0.014	35	0.015	55	0.009	75	0.079
-4	0.205	16	0.024	36	0.012	56	0.021	76	0.076
-3	0.076	17	0.018	37	0.001	57	0.016	77	0.066
-2	0.177	18	0.019	38	0.019	58	0.049	78	0.053
-1	0.144	19	0.038	39	0.008	59	0.123	79	0.040
0	0.103	20	0.049	40	0.088	60	0.178	80	0.029
1	0.845	21	0.011	41	0.149	61	0.181	81	0.020
2	0.846	22	0.008	42	0.116	62	0.128	82	0.013
3	0.182	23	0.016	43	0.038	63	0.056	83	0.008
4	0.212	24	0.020	44	0.035	64	0.045	84	0.005
5	0.092	25	0.016	45	0.024	65	0.065	85	0.003
6	0.044	26	0.111	46	0.015	66	0.053	86	0.002
7	0.090	27	0.114	47	0.010	67	0.026	87	0.001
8	0.045	28	0.040	48	0.009	68	0.026	88	0.001
9	0.047	29	0.022	49	0.010	69	0.036	89	0.000

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POWER DENSITY CALCULATION

PROPOSED WGGG-TV DTS-1  
CHANNEL 29 – GREENVILLE, SOUTH CAROLINA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Greenville facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 125 kW (H) and 37.5 kW (V), an antenna radiation center 45.1 meters above ground, and the specific elevation pattern of the proposed Dielectric TLP-32TLP(C)/VP antenna, maximum power density two meters above ground of  $0.073 \text{ mW/cm}^2$  is calculated to occur approximately 24 meters south of the base of the tower. Since this is only 3.9 percent of the  $1.87 \text{ mW/cm}^2$  reference for controlled environments (areas without public access) surrounding a facility operating on Channel 29 (560-566 MHz), and since this transmitter site is inaccessible to the public, a grant of this proposal may be considered a minor environmental action with respect to public and occupational exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.

**CONTOUR POPULATION**  
**2020 U.S. CENSUS DATA**  
**CITY-GRADE : 55,632 (24,351 HH)**  
**NOISE-LIMITED : 86,471 (38,602 HH)**

**SMITHANDFISHER**

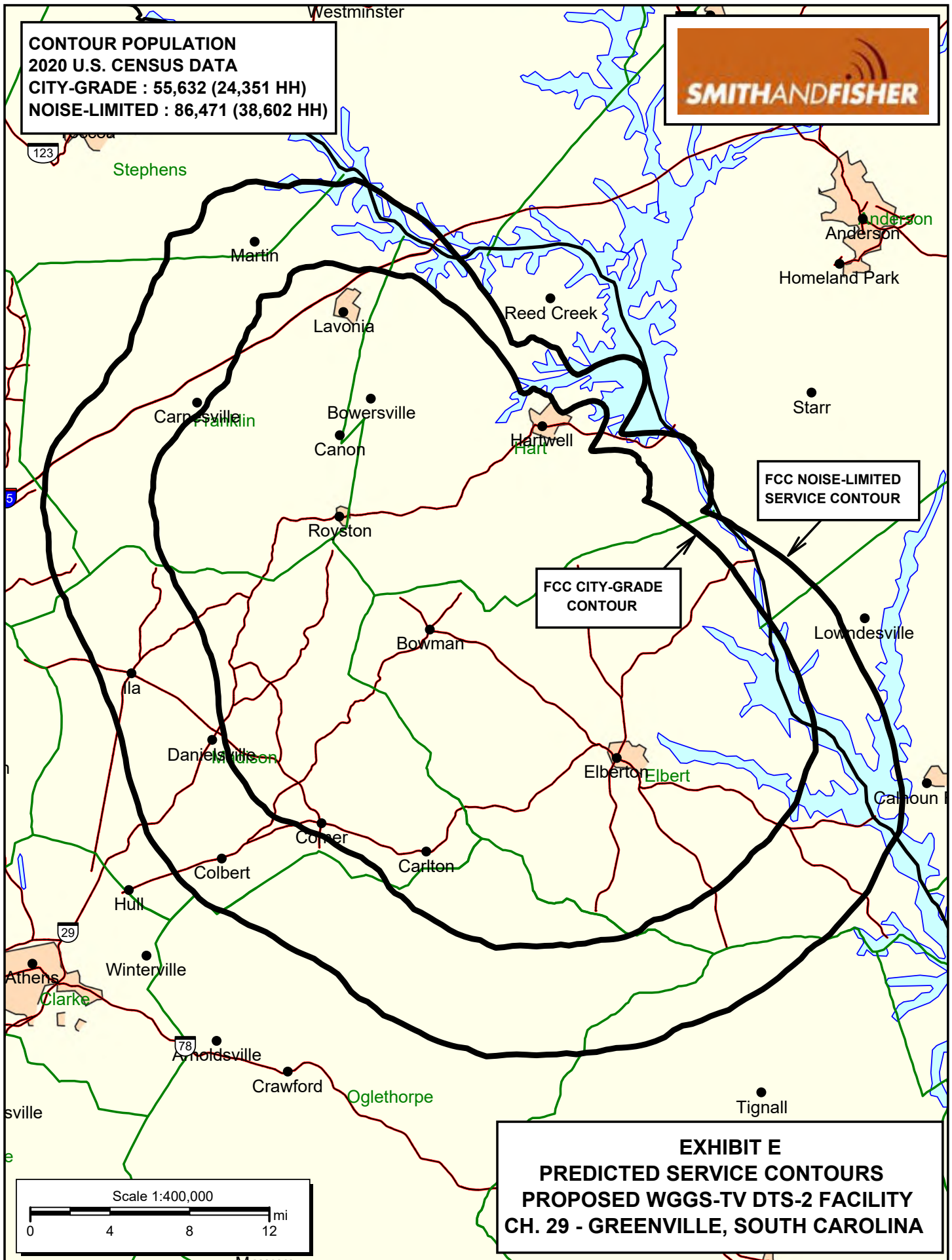




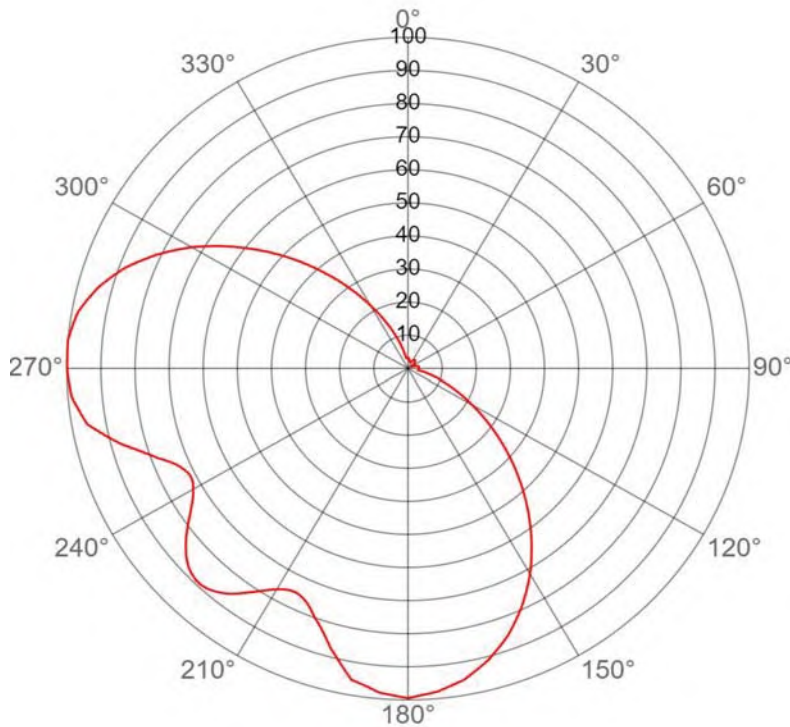
EXHIBIT F**Horizontal Polarization  
AZIMUTH PATTERN**

Exhibit No.

Date **20 Jul 2023**

Call Letters

Channel **29**Antenna Type **TUA-C2-02/04L-T**

Location

Customer

Gain **2.8 (4.47 dB)****Calculated**Drawing # **TUA-C2**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.032	36	0.032	72	0.025	108	0.087	144	0.614	180	0.995	216	0.839	252	0.815	288	0.907	324	0.308
1	0.032	37	0.032	73	0.026	109	0.096	145	0.631	181	0.992	217	0.850	253	0.833	289	0.896	325	0.292
2	0.032	38	0.032	74	0.027	110	0.104	146	0.648	182	0.989	218	0.861	254	0.853	290	0.884	326	0.277
3	0.031	39	0.032	75	0.028	111	0.114	147	0.665	183	0.986	219	0.871	255	0.873	291	0.870	327	0.262
4	0.031	40	0.032	76	0.029	112	0.124	148	0.682	184	0.984	220	0.878	256	0.889	292	0.856	328	0.247
5	0.030	41	0.032	77	0.030	113	0.135	149	0.699	185	0.981	221	0.884	257	0.906	293	0.842	329	0.233
6	0.030	42	0.032	78	0.030	114	0.145	150	0.716	186	0.974	222	0.889	258	0.922	294	0.827	330	0.218
7	0.029	43	0.032	79	0.031	115	0.155	151	0.731	187	0.968	223	0.891	259	0.939	295	0.812	331	0.205
8	0.028	44	0.031	80	0.031	116	0.167	152	0.746	188	0.963	224	0.891	260	0.955	296	0.796	332	0.193
9	0.027	45	0.030	81	0.032	117	0.179	153	0.761	189	0.958	225	0.888	261	0.962	297	0.780	333	0.181
10	0.026	46	0.029	82	0.032	118	0.191	154	0.776	190	0.954	226	0.885	262	0.969	298	0.764	334	0.169
11	0.025	47	0.028	83	0.032	119	0.204	155	0.791	191	0.937	227	0.879	263	0.975	299	0.748	335	0.156
12	0.025	48	0.027	84	0.032	120	0.216	156	0.804	192	0.921	228	0.871	264	0.982	300	0.732	336	0.146
13	0.024	49	0.026	85	0.032	121	0.231	157	0.817	193	0.904	229	0.861	265	0.989	301	0.714	337	0.136
14	0.023	50	0.024	86	0.032	122	0.245	158	0.831	194	0.889	230	0.849	266	0.991	302	0.696	338	0.125
15	0.022	51	0.023	87	0.032	123	0.260	159	0.844	195	0.874	231	0.838	267	0.993	303	0.678	339	0.115
16	0.021	52	0.021	88	0.032	124	0.275	160	0.857	196	0.856	232	0.825	268	0.995	304	0.660	340	0.105
17	0.020	53	0.020	89	0.032	125	0.290	161	0.868	197	0.839	233	0.811	269	0.997	305	0.642	341	0.096
18	0.020	54	0.018	90	0.032	126	0.306	162	0.878	198	0.824	234	0.796	270	0.999	306	0.624	342	0.088
19	0.019	55	0.017	91	0.032	127	0.322	163	0.889	199	0.811	235	0.782	271	0.999	307	0.606	343	0.080
20	0.019	56	0.015	92	0.032	128	0.338	164	0.900	200	0.799	236	0.768	272	1.000	308	0.588	344	0.071
21	0.019	57	0.014	93	0.032	129	0.354	165	0.911	201	0.785	237	0.755	273	1.000	309	0.569	345	0.063
22	0.020	58	0.013	94	0.032	130	0.370	166	0.919	202	0.774	238	0.744	274	1.000	310	0.551	346	0.057
23	0.020	59	0.012	95	0.032	131	0.387	167	0.927	203	0.764	239	0.734	275	1.000	311	0.533	347	0.050
24	0.021	60	0.012	96	0.032	132	0.404	168	0.936	204	0.757	240	0.727	276	0.997	312	0.515	348	0.044
25	0.021	61	0.012	97	0.032	133	0.422	169	0.945	205	0.753	241	0.720	277	0.993	313	0.497	349	0.037
26	0.022	62	0.012	98	0.032	134	0.439	170	0.953	206	0.751	242	0.716	278	0.990	314	0.479	350	0.031
27	0.024	63	0.013	99	0.032	135	0.456	171	0.958	207	0.752	243	0.715	279	0.986	315	0.461	351	0.031
28	0.025	64	0.014	100	0.031	136	0.474	172	0.963	208	0.756	244	0.717	280	0.982	316	0.444	352	0.031
29	0.026	65	0.015	101	0.037	137	0.491	173	0.968	209	0.761	245	0.722	281	0.974	317	0.426	353	0.031
30	0.027	66	0.017	102	0.044	138	0.509	174	0.974	210	0.769	246	0.729	282	0.966	318	0.408	354	0.031
31	0.028	67	0.018	103	0.050	139	0.526	175	0.979	211	0.778	247	0.739	283	0.958	319	0.391	355	0.031
32	0.029	68	0.020	104	0.056	140	0.544	176	0.982	212	0.789	248	0.751	284	0.949	320	0.373	356	0.032
33	0.029	69	0.021	105	0.063	141	0.561	177	0.985	213	0.801	249	0.766	285	0.941	321	0.357	357	0.032
34	0.030	70	0.022	106	0.071	142	0.579	178	0.988	214	0.813	250	0.784	286	0.930	322	0.341	358	0.032
35	0.031	71	0.024	107	0.079	143	0.596	179	0.991	215	0.826	251	0.798	287	0.918	323	0.325	359	0.032

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## ELEVATION PATTERN

Exhibit No.

Date

20 Jul 2023

Call Letters

[EXHIBIT F](#)

Channel

29

Antenna Type

TUA-C2-02/04L-T

Location

Customer

RMS Gain at Main Lobe

4.3 (6.29 dB)

Beam Tilt

0 Degrees

RMS Gain at Horizontal

4.3 (6.29 dB)

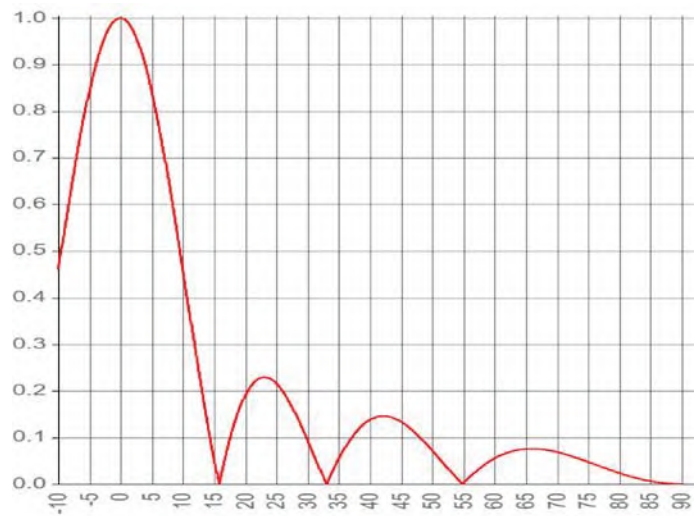
Drawing #

02U043000

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.459	10	0.459	30	0.094	50	0.072	70	0.069
-9	0.544	11	0.373	31	0.062	51	0.056	71	0.065
-8	0.627	12	0.287	32	0.031	52	0.041	72	0.061
-7	0.706	13	0.205	33	0.000	53	0.026	73	0.057
-6	0.778	14	0.126	34	0.028	54	0.011	74	0.052
-5	0.842	15	0.054	35	0.055	55	0.002	75	0.047
-4	0.897	16	0.012	36	0.078	56	0.015	76	0.043
-3	0.941	17	0.070	37	0.099	57	0.027	77	0.038
-2	0.974	18	0.119	38	0.115	58	0.038	78	0.033
-1	0.993	19	0.159	39	0.129	59	0.047	79	0.028
0	1.000	20	0.190	40	0.138	60	0.055	80	0.024
1	0.993	21	0.212	41	0.144	61	0.062	81	0.019
2	0.974	22	0.225	42	0.146	62	0.067	82	0.016
3	0.941	23	0.230	43	0.145	63	0.071	83	0.012
4	0.897	24	0.226	44	0.141	64	0.074	84	0.009
5	0.842	25	0.216	45	0.134	65	0.076	85	0.006
6	0.778	26	0.200	46	0.125	66	0.076	86	0.004
7	0.706	27	0.178	47	0.113	67	0.076	87	0.002
8	0.627	28	0.153	48	0.100	68	0.074	88	0.001
9	0.544	29	0.124	49	0.086	69	0.072	89	0.000

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POWER DENSITY CALCULATION

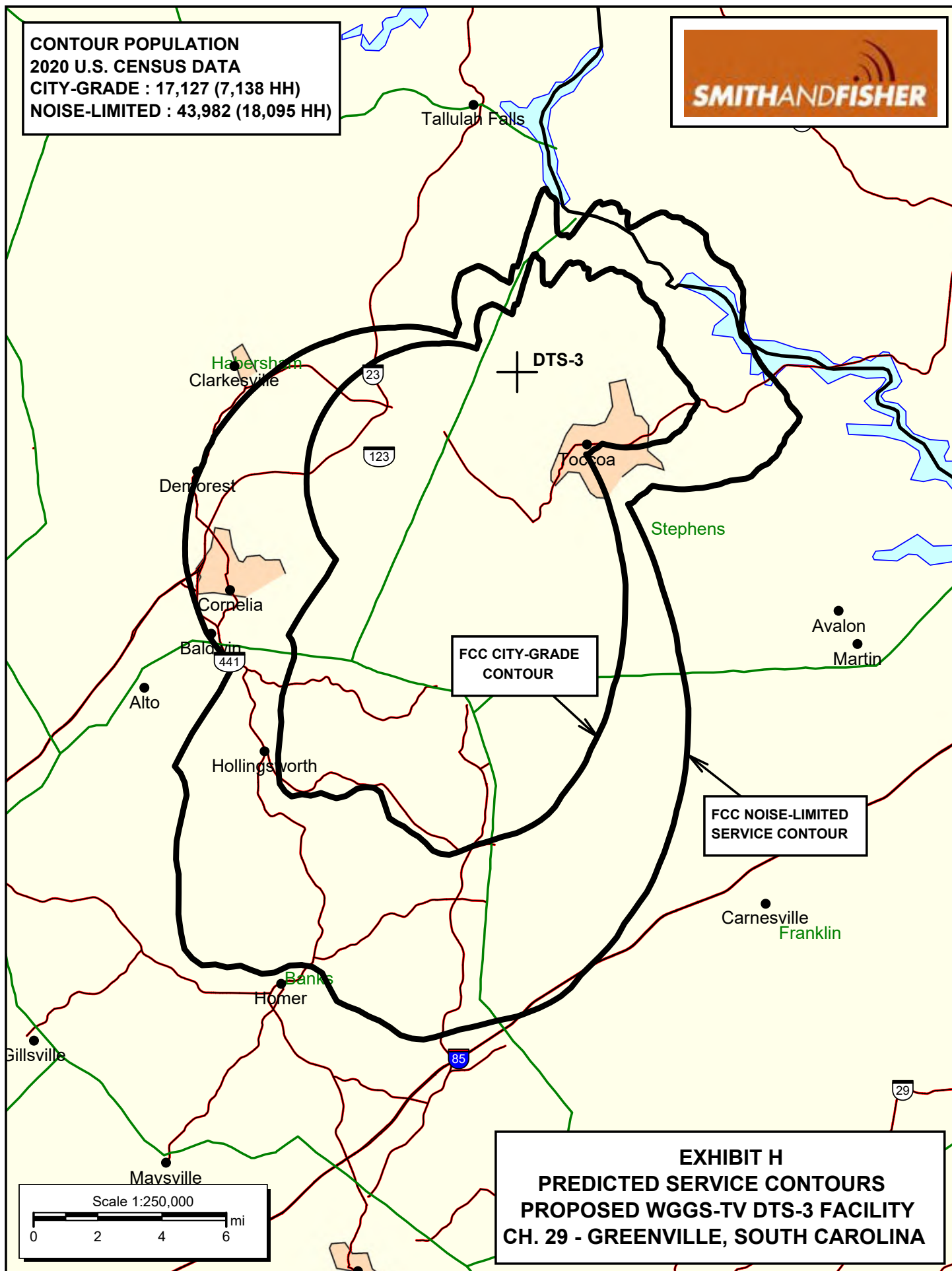
PROPOSED WGGG-TV DTS-2  
CHANNEL 29 – GREENVILLE, SOUTH CAROLINA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Greenville/Elberton facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 3.0 kW (H), an antenna radiation center 50.7 meters above ground, and the specific elevation pattern of the proposed Dielectric TUA-TU-02/04L-T antenna, maximum power density two meters above ground of  $0.00040 \text{ mW/cm}^2$  is calculated to occur approximately 54 meters south and west of the base of the tower. Since this is only 0.1 percent of the  $0.37 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 29 (560-566 MHz), a grant of this proposal may be considered a minor environmental action with respect to public and occupational exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.

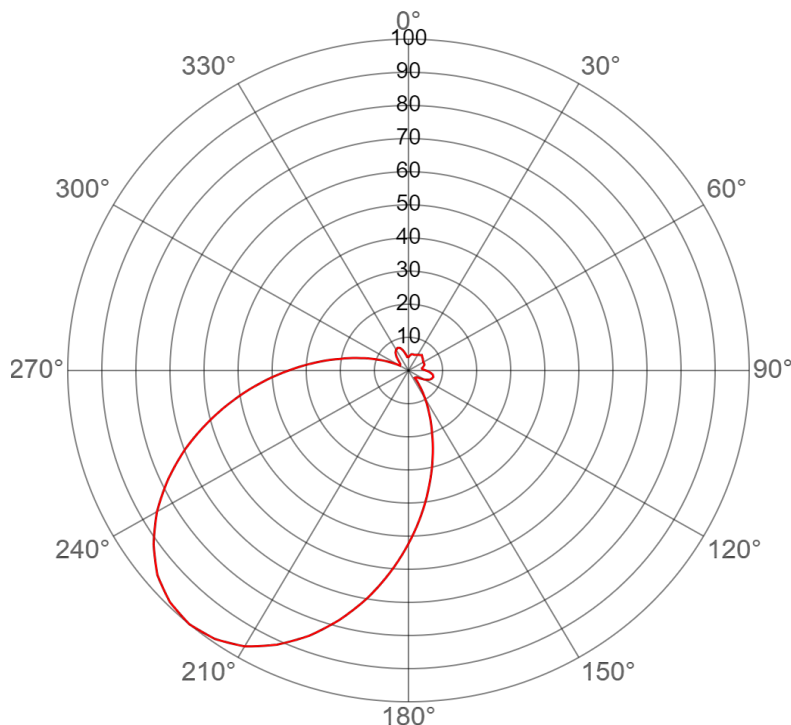
CONTOUR POPULATION  
2020 U.S. CENSUS DATA  
CITY-GRADE : 17,127 (7,138 HH)  
NOISE-LIMITED : 43,982 (18,095 HH)

SMITHANDFISHER



**EXHIBIT H**  
**PREDICTED SERVICE CONTOURS**  
**PROPOSED WGGS-TV DTS-3 FACILITY**  
**CH. 29 - GREENVILLE, SOUTH CAROLINA**

## EXHIBIT I



### Horizontal Polarization AZIMUTH PATTERN

Exhibit No.  
Date **13 Sep 2023**  
Call Letters  
Channel **29**  
Antenna Type **TUA-C1-01/01L-T**  
Location  
Customer  
  
Gain **5.8 (7.63 dB)**  
**Calculated**  
Drawing # **TUA-C1A**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.040	36	0.058	72	0.048	108	0.074	144	0.052	180	0.523	216	0.992	252	0.663	288	0.115	324	0.064
1	0.041	37	0.059	73	0.047	109	0.073	145	0.058	181	0.540	217	0.994	253	0.646	289	0.106	325	0.066
2	0.042	38	0.059	74	0.046	110	0.072	146	0.066	182	0.558	218	0.996	254	0.628	290	0.096	326	0.067
3	0.043	39	0.060	75	0.045	111	0.071	147	0.073	183	0.576	219	0.998	255	0.611	291	0.089	327	0.069
4	0.044	40	0.061	76	0.044	112	0.070	148	0.081	184	0.593	220	1.000	256	0.593	292	0.081	328	0.070
5	0.045	41	0.060	77	0.043	113	0.069	149	0.089	185	0.611	221	0.998	257	0.576	293	0.073	329	0.071
6	0.046	42	0.059	78	0.042	114	0.067	150	0.096	186	0.628	222	0.996	258	0.558	294	0.066	330	0.072
7	0.047	43	0.059	79	0.041	115	0.066	151	0.106	187	0.646	223	0.994	259	0.540	295	0.058	331	0.073
8	0.048	44	0.058	80	0.040	116	0.064	152	0.115	188	0.663	224	0.992	260	0.523	296	0.052	332	0.074
9	0.049	45	0.057	81	0.040	117	0.061	153	0.125	189	0.681	225	0.990	261	0.505	297	0.046	333	0.074
10	0.050	46	0.057	82	0.040	118	0.059	154	0.135	190	0.698	226	0.984	262	0.488	298	0.040	334	0.075
11	0.050	47	0.056	83	0.041	119	0.057	155	0.144	191	0.714	227	0.978	263	0.471	299	0.035	335	0.075
12	0.050	48	0.056	84	0.041	120	0.054	156	0.156	192	0.730	228	0.973	264	0.453	300	0.029	336	0.075
13	0.050	49	0.055	85	0.041	121	0.052	157	0.168	193	0.746	229	0.967	265	0.436	301	0.029	337	0.074
14	0.050	50	0.055	86	0.043	122	0.049	158	0.179	194	0.762	230	0.962	266	0.419	302	0.029	338	0.074
15	0.051	51	0.054	87	0.045	123	0.046	159	0.191	195	0.779	231	0.952	267	0.402	303	0.029	339	0.073
16	0.051	52	0.054	88	0.047	124	0.043	160	0.202	196	0.793	232	0.942	268	0.385	304	0.030	340	0.072
17	0.050	53	0.053	89	0.049	125	0.041	161	0.217	197	0.808	233	0.933	269	0.368	305	0.030	341	0.071
18	0.050	54	0.053	90	0.051	126	0.039	162	0.231	198	0.823	234	0.923	270	0.351	306	0.030	342	0.069
19	0.050	55	0.052	91	0.054	127	0.037	163	0.245	199	0.837	235	0.913	271	0.336	307	0.031	343	0.067
20	0.050	56	0.052	92	0.056	128	0.035	164	0.259	200	0.852	236	0.901	272	0.320	308	0.031	344	0.065
21	0.051	57	0.051	93	0.058	129	0.034	165	0.274	201	0.864	237	0.889	273	0.305	309	0.031	345	0.063
22	0.051	58	0.051	94	0.061	130	0.032	166	0.289	202	0.877	238	0.877	274	0.289	310	0.032	346	0.061
23	0.051	59	0.051	95	0.063	131	0.031	167	0.305	203	0.889	239	0.864	275	0.274	311	0.034	347	0.058
24	0.052	60	0.050	96	0.065	132	0.031	168	0.320	204	0.901	240	0.852	276	0.259	312	0.035	348	0.056
25	0.052	61	0.050	97	0.067	133	0.031	169	0.336	205	0.913	241	0.837	277	0.245	313	0.037	349	0.054
26	0.053	62	0.050	98	0.069	134	0.030	170	0.351	206	0.923	242	0.823	278	0.231	314	0.039	350	0.051
27	0.053	63	0.050	99	0.071	135	0.030	171	0.368	207	0.933	243	0.808	279	0.217	315	0.041	351	0.049
28	0.054	64	0.051	100	0.072	136	0.030	172	0.385	208	0.942	244	0.793	280	0.202	316	0.043	352	0.047
29	0.054	65	0.051	101	0.073	137	0.029	173	0.402	209	0.952	245	0.779	281	0.191	317	0.046	353	0.045
30	0.055	66	0.050	102	0.074	138	0.029	174	0.419	210	0.962	246	0.762	282	0.179	318	0.049	354	0.043
31	0.055	67	0.050	103	0.074	139	0.029	175	0.436	211	0.967	247	0.746	283	0.168	319	0.052	355	0.041
32	0.056	68	0.050	104	0.075	140	0.029	176	0.453	212	0.973	248	0.730	284	0.156	320	0.054	356	0.041
33	0.056	69	0.050	105	0.075	141	0.035	177	0.471	213	0.978	249	0.714	285	0.144	321	0.057	357	0.041
34	0.057	70	0.050	106	0.075	142	0.040	178	0.488	214	0.984	250	0.698	286	0.135	322	0.059	358	0.040
35	0.057	71	0.049	107	0.074	143	0.046	179	0.505	215	0.990	251	0.681	287	0.125	323	0.061	359	0.040

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## ELEVATION PATTERN

### EXHIBIT I

Exhibit No.

Date

13 Sep 2023

Call Letters

Channel

29

Antenna Type

TUA-C1-01/01L-T

Location

Customer

RMS Gain at Main Lobe

2.1 (3.30 dB)

Beam Tilt

0 Degrees

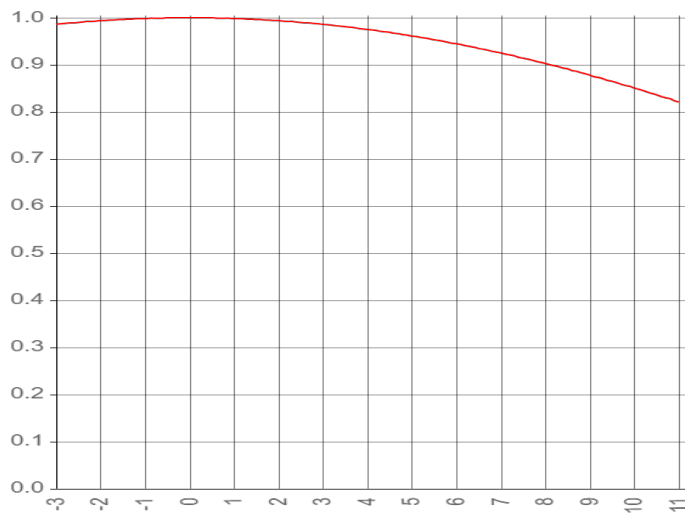
RMS Gain at Horizontal

2.1 (3.30 dB)

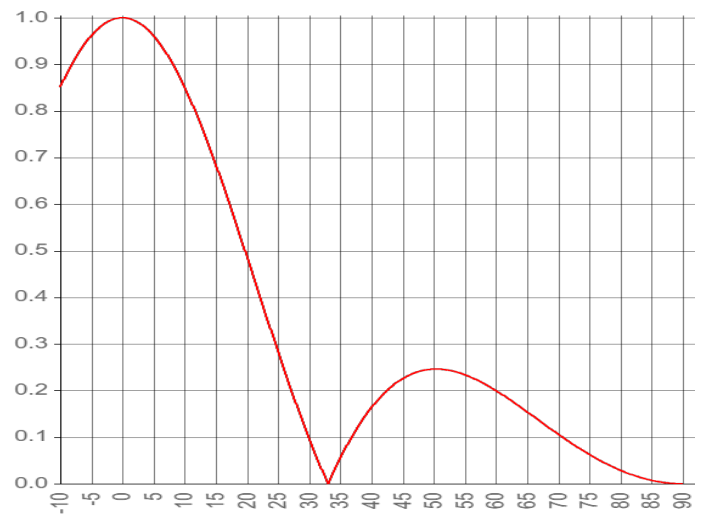
Drawing #

01U022000

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.851	10	0.851	30	0.097	50	0.246	70	0.106
-9	0.878	11	0.821	31	0.063	51	0.246	71	0.097
-8	0.903	12	0.790	32	0.031	52	0.244	72	0.088
-7	0.925	13	0.757	33	0.000	53	0.242	73	0.079
-6	0.945	14	0.722	34	0.028	54	0.238	74	0.071
-5	0.961	15	0.685	35	0.055	55	0.234	75	0.063
-4	0.975	16	0.647	36	0.081	56	0.228	76	0.055
-3	0.986	17	0.608	37	0.104	57	0.222	77	0.048
-2	0.994	18	0.569	38	0.126	58	0.215	78	0.041
-1	0.998	19	0.528	39	0.146	59	0.208	79	0.035
0	1.000	20	0.487	40	0.163	60	0.200	80	0.029
1	0.998	21	0.446	41	0.179	61	0.191	81	0.023
2	0.994	22	0.405	42	0.194	62	0.182	82	0.019
3	0.986	23	0.364	43	0.206	63	0.173	83	0.014
4	0.975	24	0.324	44	0.217	64	0.164	84	0.011
5	0.961	25	0.284	45	0.225	65	0.154	85	0.007
6	0.945	26	0.244	46	0.233	66	0.145	86	0.005
7	0.925	27	0.206	47	0.238	67	0.135	87	0.003
8	0.903	28	0.168	48	0.242	68	0.125	88	0.001
9	0.878	29	0.132	49	0.245	69	0.116	89	0.000

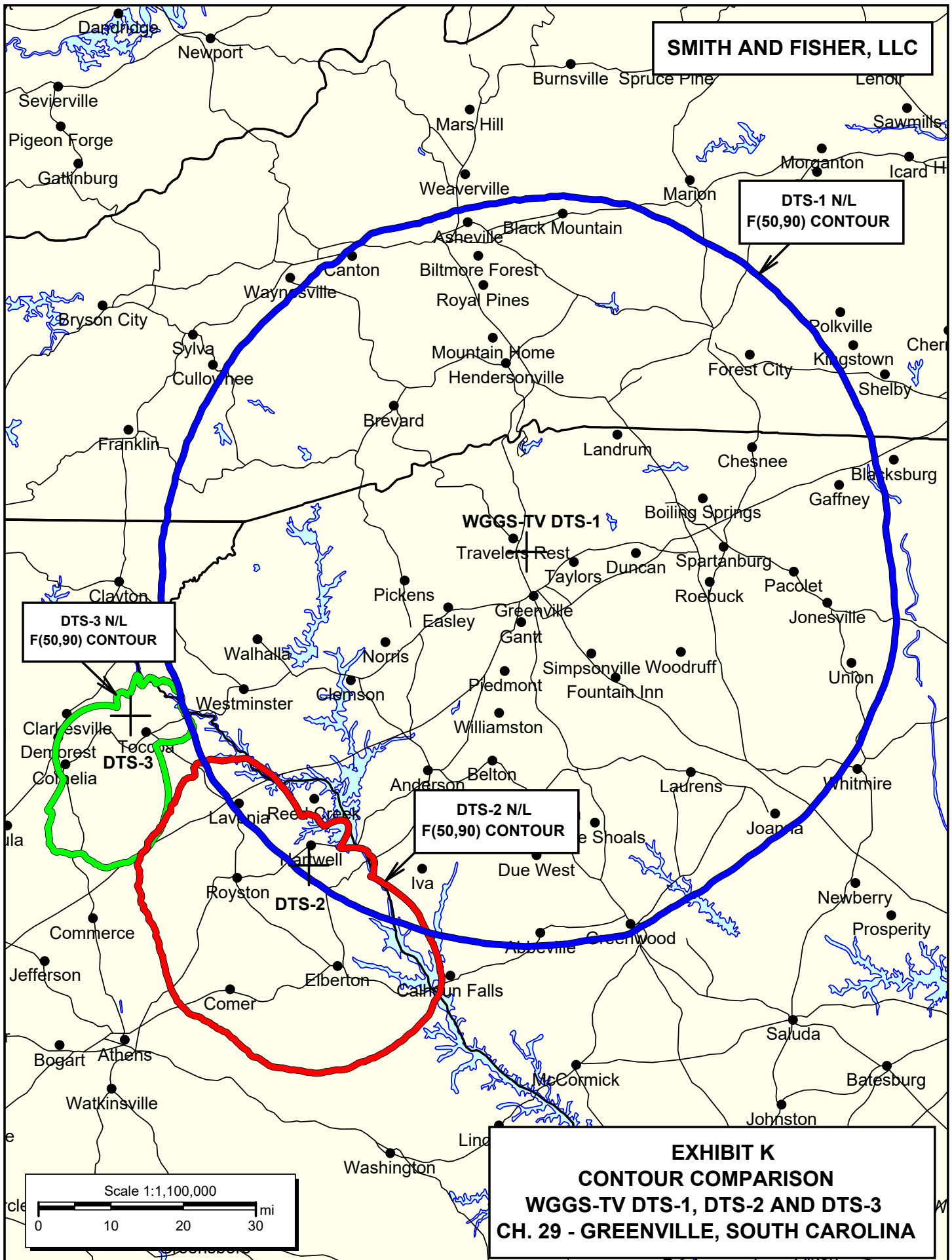
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POWER DENSITY CALCULATION

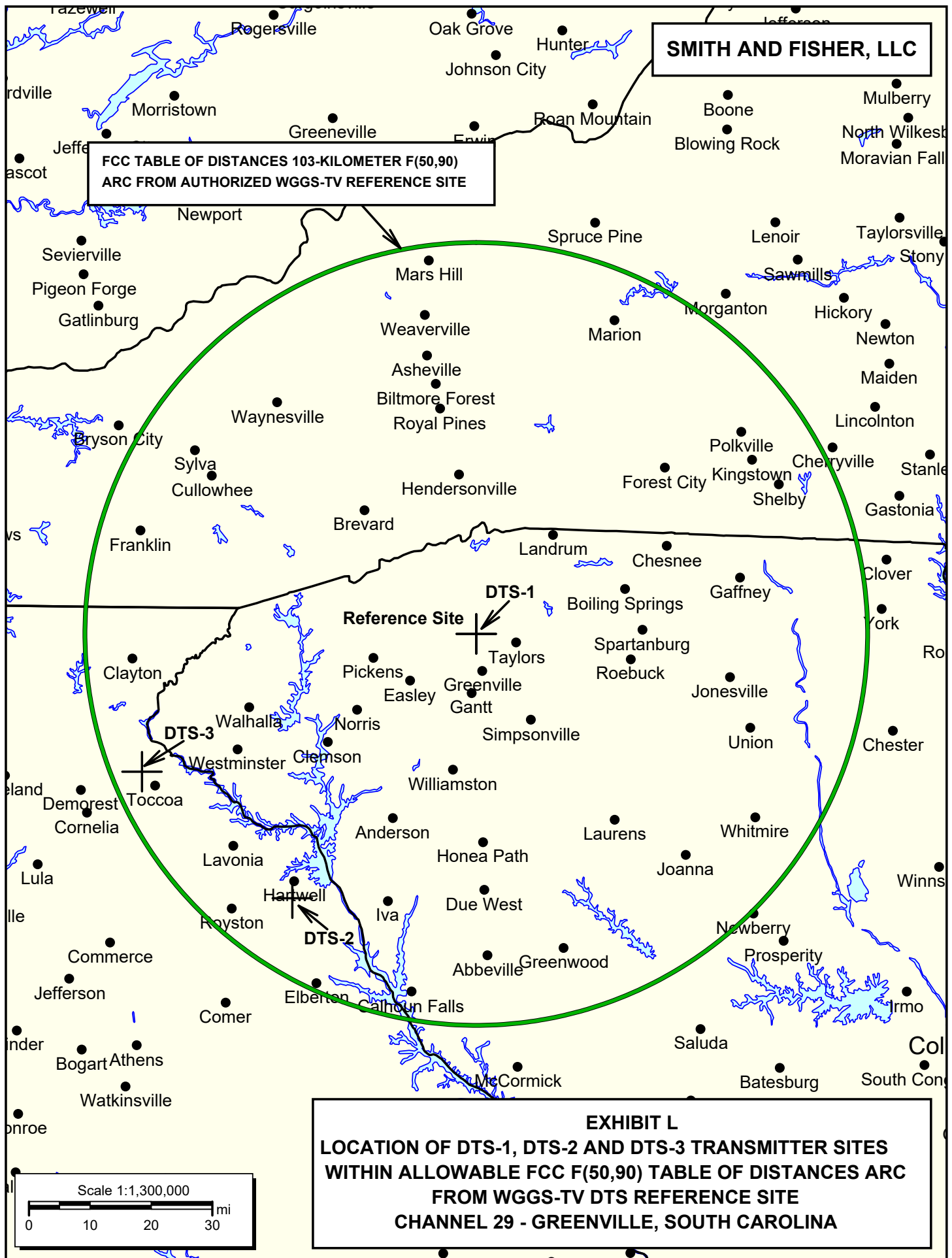
PROPOSED WGGG-TV DTS-3  
CHANNEL 29 – GREENVILLE, SOUTH CAROLINA

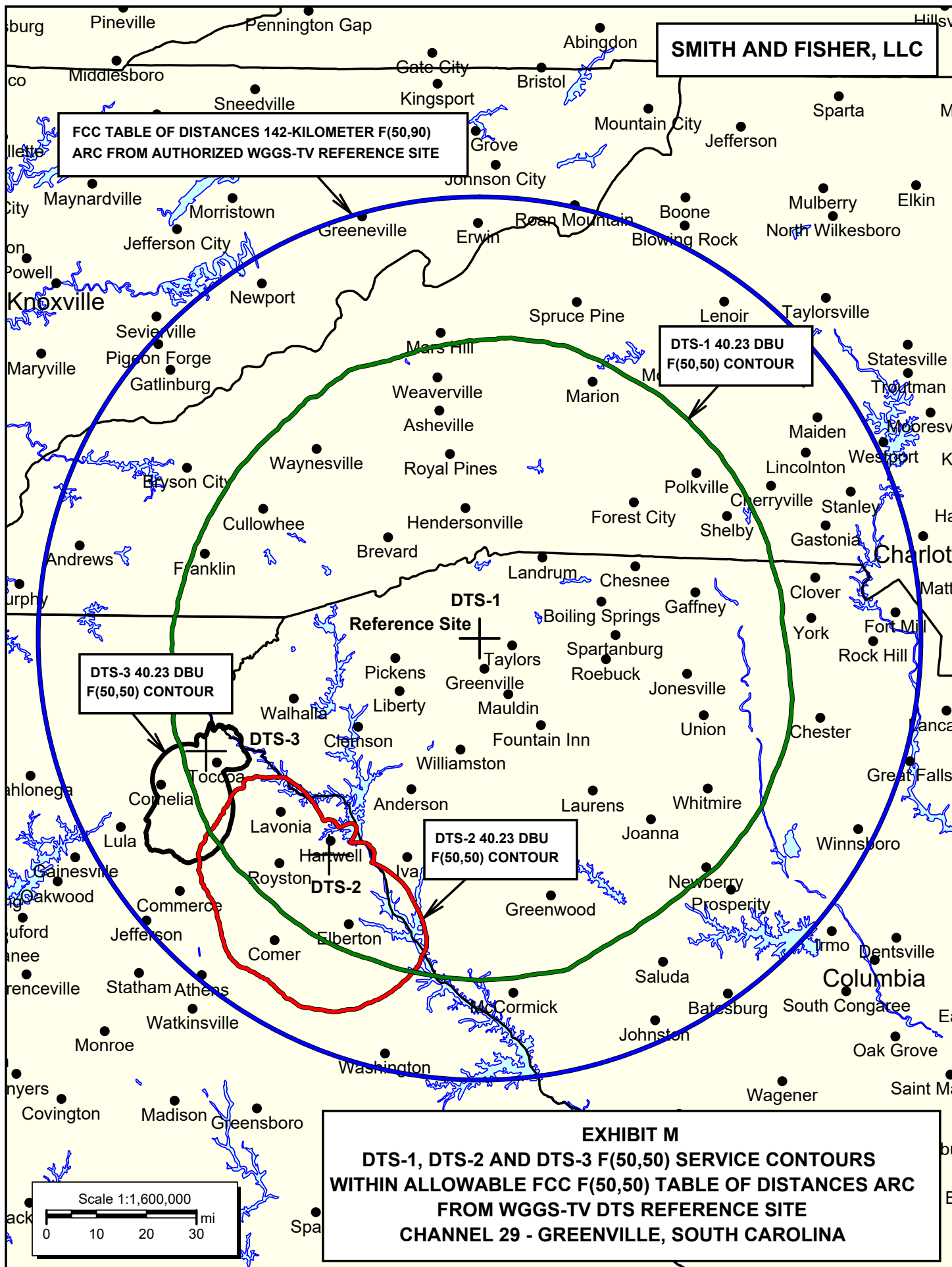
Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Greenville/Hollingsworth facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 0.2 kW (H), an antenna center of radiation center 20 meters above ground, and the specific elevation pattern of the proposed Dielectric TUA-C1A antenna, maximum power density two meters above ground of  $0.00075 \text{ mW/cm}^2$  is calculated to occur approximately 54 meters southwest of the base of the tower. Since this is only 0.2 percent of the  $0.37 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 29 (560-566 MHz), a grant of this proposal may be considered a minor environmental action with respect to public and occupational exposure to non-ionizing electromagnetic radiation.

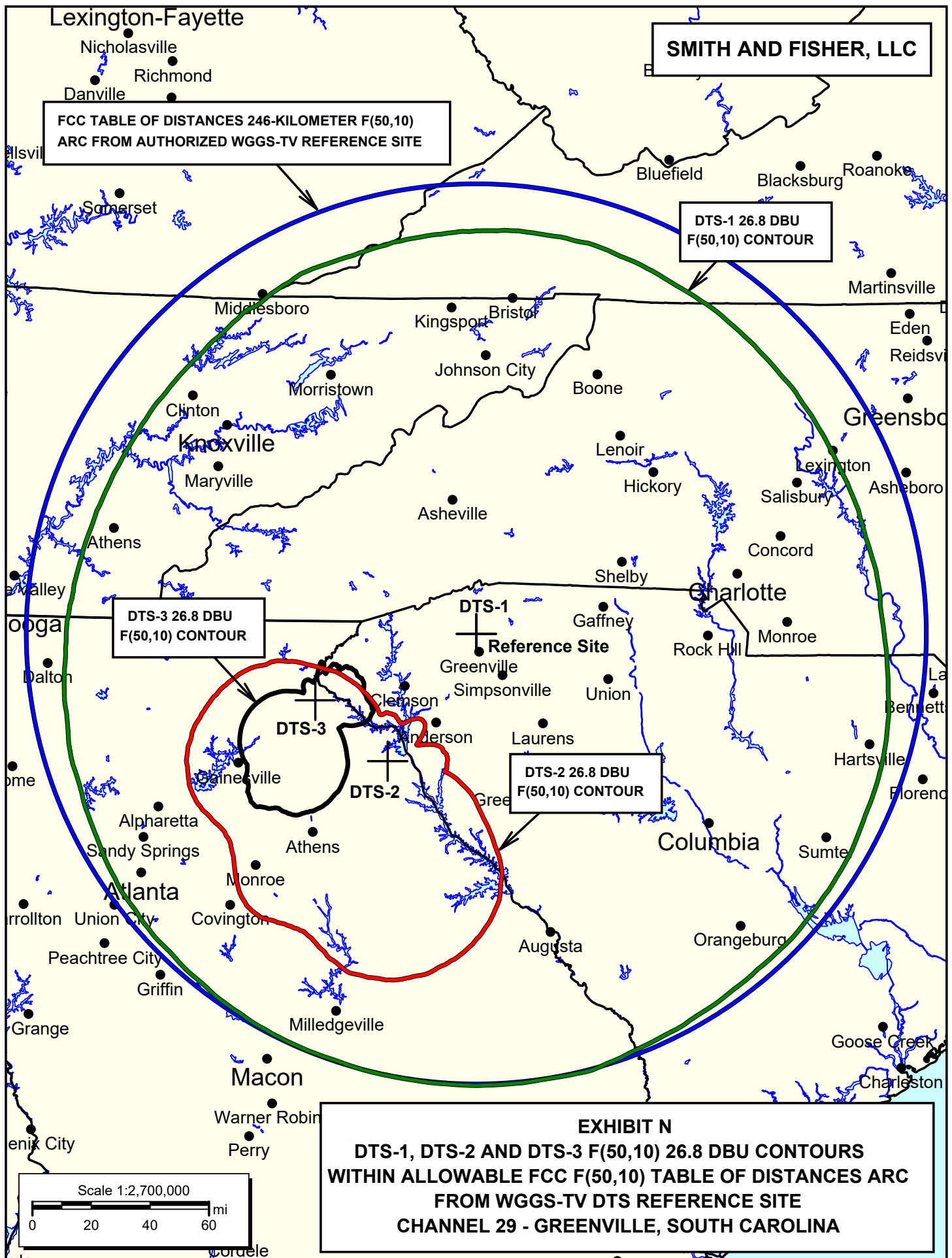
Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.











TVSTUDY INTERFERENCE ANALYSIS RESULTS  
 PROPOSED WGGG-DT DTS  
 CHANNEL 29 – GREENVILLE, SOUTH CAROLINA

Study created: 2023.09.13 11:49:13

Study build station data: LMS TV 2023-08-30 #5

Proposal: WGGG-TV D29 DD LIC GREENVILLE, SC

File number: BLANK0000084134

Facility ID: 9064

Station data: User record

Record ID: 8

Country: U.S.

Zone: II

Ref. lat.: 34 56 26.40 N

Ref. long.: 82 24 40.40 W

# DTS sites: 3

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	WJBF	D28	DT	LIC	AUGUSTA, GA	BLANK0000116201	178.7 km
No	WELF-TV	D28	DT	LIC	DALTON, GA	BLANK0000090766	274.5
No	WMYV	D28	DT	LIC	GREENSBORO, NC	BLANK0000158590	256.0
No	WEMT	D28	DT	LIC	GREENEVILLE, TN	BLANK0000072087	169.9
No	WBRC	D29	DT	LIC	BIRMINGHAM, AL	BLANK0000192788	434.4
No	WFXL	D29	DT	CP	ALBANY, GA	BLANK0000150485	423.3
No	WFXL	D29	DT	BL	ALBANY, GA	DTVBL70815	423.3
Yes	WYGA-CD	D29	DC	LIC	ATLANTA, GA	BLANK0000200786	222.8
No	WKGB-TV	D29	DT	LIC	BOWLING GREEN, KY	BLANK0000087457	448.5
No	WSFX-TV	D29	DT	LIC	WILMINGTON, NC	BLANK0000219015	397.0
Yes	WXLV-TV	D29	DT	LIC	WINSTON-SALEM, NC	BLANK0000158591	256.0
Yes	WRJA-TV	D29	DT	LIC	SUMTER, SC	BLANK0000153954	228.9
Yes	WKOP-TV	D29	DT	LIC	KNOXVILLE, TN	BLANK0000081273	182.5
No	WCHS-TV	D29	DT	LIC	CHARLESTON, WV	BLANK0000167887	388.0
No	WAGT-CD	D30	DC	LIC	AUGUSTA, GA	BLANK0000063630	178.7
No	WMGT-TV	D30	DT	LIC	MACON, GA	BLANK0000075816	265.3
Yes	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000190317	26.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied, DTS site # 1:

Channel: D29

Latitude: 34 18 45.00 N (NAD83)

Longitude: 82 56 15.00 W

Height AMSL: 300.0 m

HAAT: 81.6 m

Peak ERP: 3.00 kW

Antenna: Dielectric TUA-TU-02/04L-T 0.0 deg

Elev Pattn: Generic

40.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	71.3 m	6.4 km
45.0	0.000	93.3	7.3
90.0	0.000	117.1	8.1
135.0	0.654	112.9	40.8
180.0	3.00	90.3	45.8
225.0	2.44	68.3	41.5
270.0	3.00	46.6	38.0
315.0	0.654	52.8	32.4

Record parameters as studied, DTS site # 2:

Channel: D29

Latitude: 34 56 26.40 N (NAD83)

Longitude: 82 24 40.40 W

Height AMSL: 660.1 m

HAAT: 354.0 m

Peak ERP: 125 kW

Antenna: Dielectric TLP-32TLP(C)/VP 0.0 deg

Elev Pattn: Generic

Elec Tilt: 1.50

40.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	47.9 kW	331.6 m	77.9 km
45.0	37.5	362.0	79.1
90.0	49.9	351.6	80.1
135.0	99.5	352.1	84.9
180.0	125	364.7	87.7
225.0	99.5	365.8	86.1
270.0	49.9	355.1	80.4
315.0	37.5	334.8	76.7

Database HAAT does not agree with computed HAAT

Database HAAT: 354 m    Computed HAAT: 352 m

Record parameters as studied, DTS site # 3:

Channel: D29

Latitude: 34 36 35.70 N (NAD83)

Longitude: 83 22 14.30 W

Height AMSL: 454.0 m

HAAT: 98.9 m

Peak ERP: 0.200 kW

Antenna: Dielectric TUA-C1A 0.0 deg

Elev Pattn: Generic

40.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	46.8 m	5.3 km
45.0	0.000	139.1	10.8
90.0	0.000	216.6	12.2
135.0	0.000	170.6	8.5
180.0	0.055	179.0	32.4
225.0	0.192	33.2	21.4
270.0	0.025	18.8	12.3
315.0	0.000	-13.0	4.4

\*\*DTS proposal has coverage outside reference facility and distance limit

Distance to Canadian border: 748.7 km

Distance to Mexican border: 1613.9 km

Conditions at FCC monitoring station: Powder Springs GA

DTS site # 1    Bearing: 253.6 degrees    Distance: 171.9 km

DTS site # 2    Bearing: 241.2 degrees    Distance: 243.6 km

DTS site # 3    Bearing: 236.6 degrees    Distance: 149.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

DTS site # 1    Bearing: 294.7 degrees    Distance: 2069.1 km

DTS site # 2    Bearing: 292.8 degrees    Distance: 2085.1 km

DTS site # 3    Bearing: 294.1 degrees    Distance: 2019.3 km

Study cell size: 1.00 km

Profile point spacing: 0.10 km

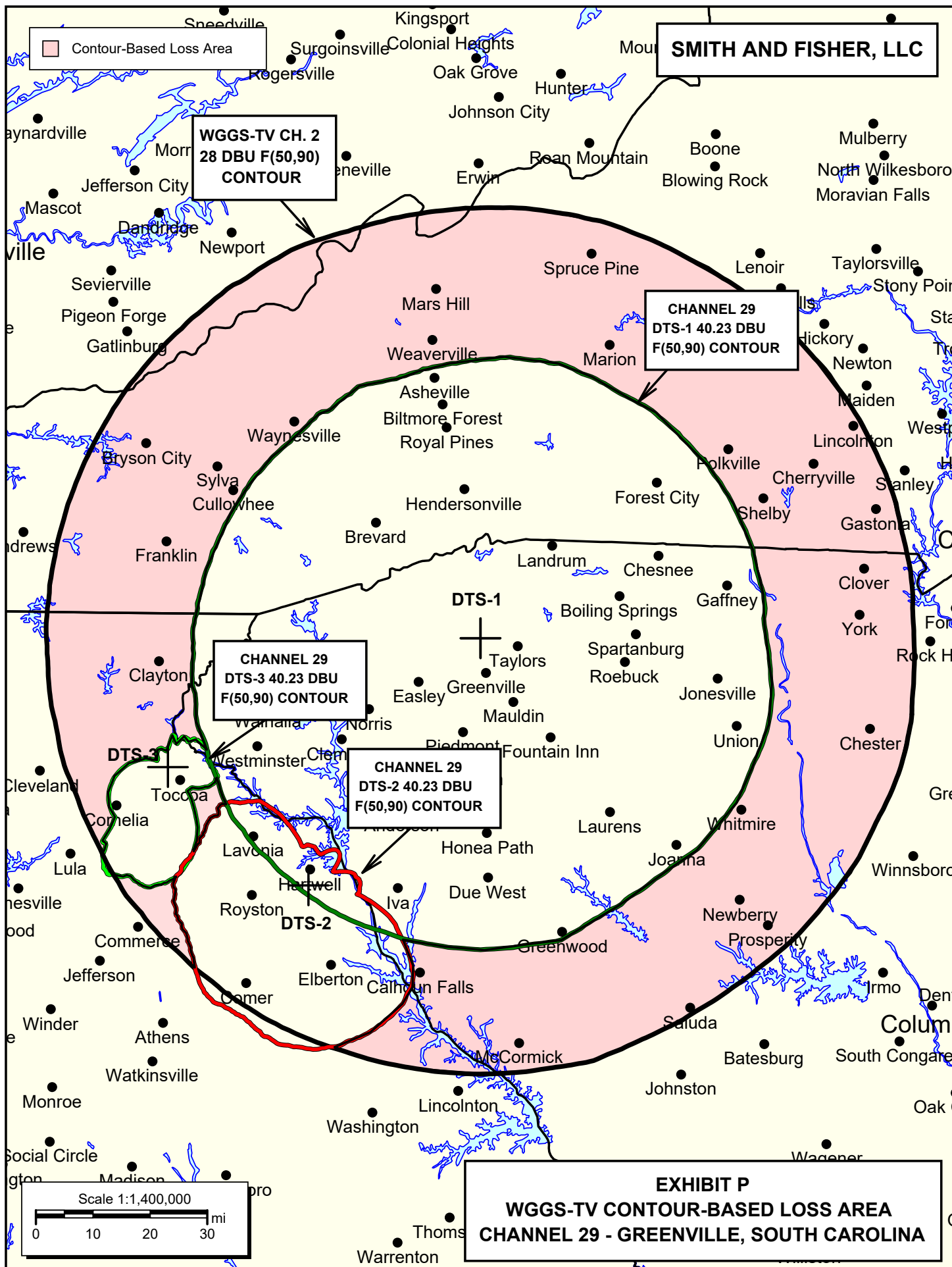
Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

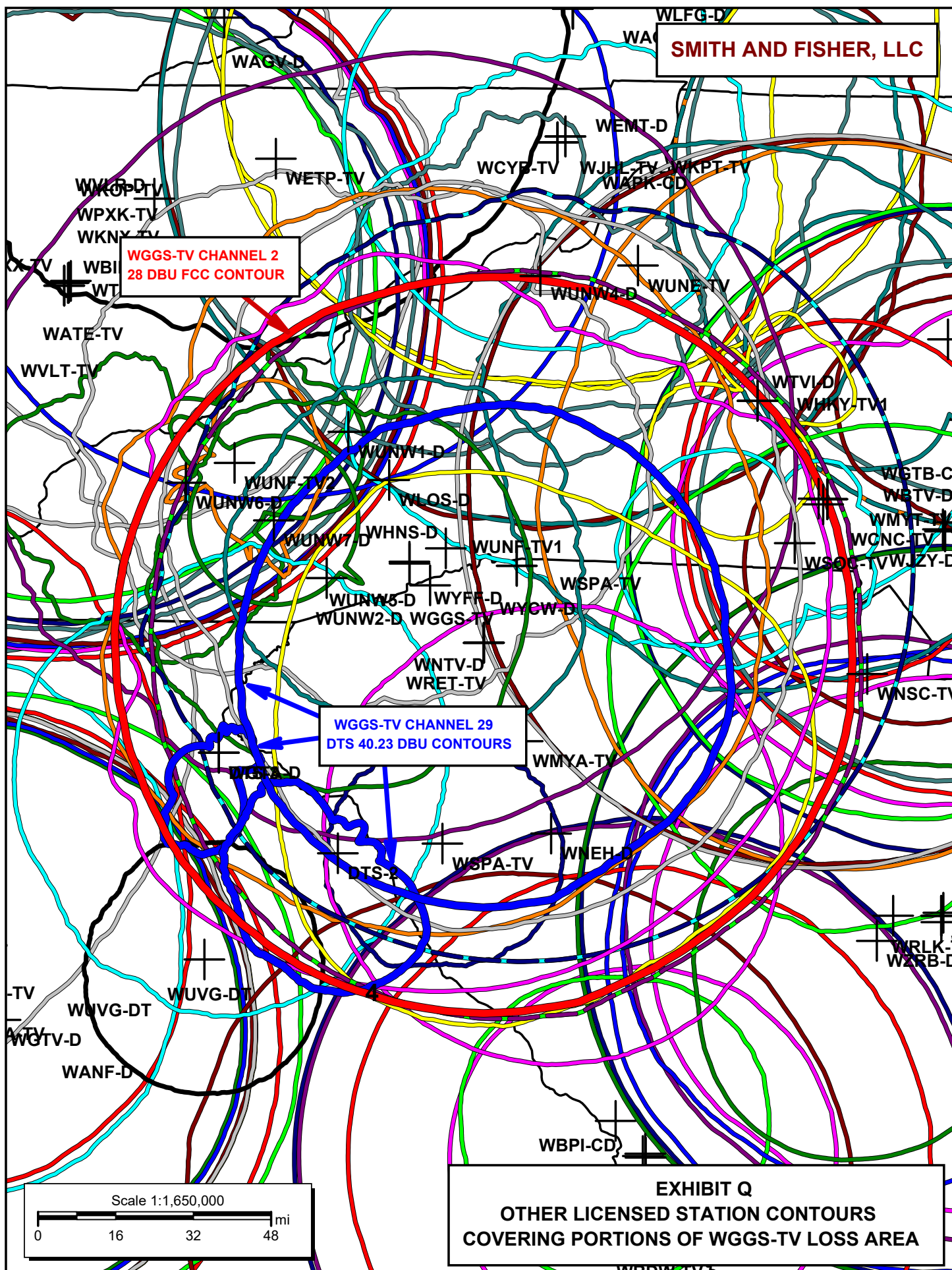
---- Below is IX received by proposal BLANK0000084134 ----

Proposal receives 4.88% interference from scenario 1

No IX check failures found.







Call Sign	Lic	Chan.	Svc	Cls	City	ST	DA	Power	HAAT (m)	Facility ID	File Number
-----	---	----	---	---	-----	--	--	-----	-----	-----	-----
WGGS-TV	LI	2	T	2C	Greenville	SC	No	33.0	354.0	9064	0000084134
DTS-1		29	T		Greenville	NC	Yes	125.0	352.11	9064	0000000000
DTS-2		29	D		Elberton	GA	Yes	3.0	81.57	9064	0000000000
DTS-3		29	D		Toccoa	GA	Yes	0.2	98.89	9064	0000000000
WNTV-D	LI	8	T	2E	Greenville	SC	Yes	180.0	389.3	61010	0000202826
WRET-TV	LI	9	H	2E	Spartanburg	SC	Yes	180.0	389.3	61011	0000203010
WYFF-D	LI	30	T	2C	Greenville	SC	No	1000.0	597.9	53905	0000190317
WYCW-D	LI	11	H	2C	Asheville	NC	No	33.5	674.2	70149	0000117888
WSPA-TV	LI	11	T	2C	Spartanburg	SC	No	33.5	674.2	66391	0000190462
WUNF-TV1	LI	20	D	2E	Asheville	NC	Yes	1000.0	550.7	69300	0000093577
WMYA-TV	LI	35	T	2C	Anderson	SC	Yes	750.0	320.0	56548	0000190291
WUNW2-D	LI	27	D	2E	Canton	NC	No	0.9	429.2	83822	0000163367
WHNS-D	LI	17	T	2C	Greenville	SC	Yes	364.0	759.0	72300	0000190316
WUNW5-D	LI	27	D	2E	Canton	NC	No	0.88	570.2	83822	0000163367
WLOS-D	LI	13	T	2C	Asheville	NC	Yes	50.0	849.4	56537	0000190297
WNEH-D	LI	26	T	2E	Greenwood	SC	No	147.0	234.4	60931	0000153952
WSPA-TV	LI	22	G	C	Spartanburg	SC	No	15.0		66391	0000066995
WUNW7-D	LI	27	D	2E	Canton	NC	No	0.94	-146.0	83822	0000163367
WUNW1-D	LI	27	D	2E	Canton	NC	Yes	115.0	504.9	83822	0000163367
WGTA-D	LI	24	T	2C	Toccoa	GA	Yes	240.0	235.1	63329	0000001315
WUNF-TV2	LI	20	D	2E	Asheville	NC	Yes	1.73	-144.8	69300	0000093577
WSOC-TV	LI	12	G	C	Charlotte	NC	Yes	3.0		74070	0000116025
WUNW6-D	LI	27	D	2E	Canton	NC	No	0.94	279.5	83822	0000163367
WBTB-TV	LI	23	T	2C	Charlotte	NC	No	1000.0	565.0	30826	0000147971
WTVI-D	LI	28	G	E	Charlotte	NC	Yes	5.0		10645	0000112407
WHKY-TV1	LI	14	D	2C	Hickory	NC	Yes	1000.0	256.0	65919	0000109333
WCNC-TV	LI	24	T	2C	Charlotte	NC	Yes	857.0	592.2	32326	0000147158
WUNW4-D	LI	27	D	2E	Canton	NC	No	0.94	320.7	83822	0000163367
WJZY-D	LI	25	T	2C	Belmont	NC	Yes	1000.0	553.5	73152	0000146872
WGTB-CD	LI	27	F		Charlotte	NC	Yes	15.0		70097	0000120552
WMYT-TV	LI	25	H	2C	Rock Hill	SC	Yes	1000.0	553.5	20624	0000081782
WNSC-TV	LI	34	T	2E	Rock Hill	SC	Yes	1000.0	209.9	61009	0000105822
WUNE-TV	LI	36	T	2E	Linville	NC	Yes	1000.0	546.9	69114	0000111606
WUVG-DT	LI	35	G	C	Athens	GA	Yes	13.5		48813	0000081844
WCCB-D	LI	18	T	2C	Charlotte	NC	Yes	963.0	364.0	49157	0000097908
WAXN-TV	LI	32	T	2C	Kannapolis	NC	Yes	200.0	372.0	12793	0000146859
WSOC-TV	LI	19	T	2C	Charlotte	NC	No	1000.0	356.0	74070	0000146857

WTVI-D	LI	9	T	2E	Charlotte	NC	No	2.57	359.0	10645	0000117588
WHKY-TV2	LI	14	D	2C	Hickory	NC	Yes	260.0	161.0	65919	0000109333
WRLK-TV	LI	33	T	2E	Columbia	SC	No	281.0	316.9	61013	0000111852
WZRB-D	LI	25	T	2C	Columbia	SC	Yes	155.0	192.0	136750	0000081456
WBPI-CD	LI	19	F		Augusta	GA	No	15.0		17464	0000059661
WAPK-CD	LI	16	F		Bristol Va/kingspor	TN	No	13.0		77677	0000070481
WKPT-TV	LI	32	T	2C	Kingsport	TN	Yes	265.0	711.0	27504	0000070485
WJHL-TV	LI	9	T	2C	Johnson City	TN	Yes	38.0	703.2	57826	0000116747
WEMT-D	LI	28	T	2C	Greeneville	TN	Yes	1000.0	719.3	40761	0000072087
WCYB-TV	LI	35	T	2C	Bristol	VA	No	1000.0	755.0	2455	0000206832
WUNG-TV	LI	21	T	2E	Concord	NC	No	260.0	416.7	69124	0000113063
WETP-TV	LI	24	T	2E	Sneedville	TN	No	313.0	566.9	18252	0000120200
WOLO-TV	LI	7	T	2C	Columbia	SC	No	43.7	530.0	60963	0000117301
WACH-D	LI	22	T	2C	Columbia	SC	Yes	460.0	464.0	19199	0000093772
WKTC-D	LI	31	T	2C	Sumter	SC	Yes	426.0	391.0	40902	0000093003
WIS-D	LI	10	T	2C	Columbia	SC	No	57.0	481.0	13990	BLCDT-20090624A
WAXN-TV	LI	30	G	C	Kannapolis	NC	Yes	12.0		12793	0000119096
WFXG-D	LI	36	T	2C	Augusta	GA	No	373.0	380.0	3228	0000081277
WLTX-D	LI	15	T	2C	Columbia	SC	Yes	700.0	531.7	37176	0000082085
WRDW-TV	LI	12	T	2C	Augusta	GA	No	20.2	483.6	73937	BLCDT-20090227A
WAGT-CD	LI	30	F		Augusta	GA	No	15.0		3369	0000063630
WJBF-D	LI	28	T	2C	Augusta	GA	No	755.0	504.4	27140	0000116201
WKNX-TV	LI	7	T	2C	Knoxville	TN	Yes	55.0	382.0	83931	BLCDT-20040810A
WPXK-TV	LI	18	T	2C	Jellico	TN	Yes	1000.0	512.5	52628	0000081463
WBIR-TV	LI	10	T	2C	Knoxville	TN	No	40.9	546.0	46984	BLCDT-20090619A
WATE-TV	LI	26	T	2C	Knoxville	TN	No	930.0	529.2	71082	BMLCDT-20041203
WKOP-TV	LI	29	T	2E	Knoxville	TN	No	146.0	551.3	18267	0000081273
WVLT-TV	LI	34	T	2C	Knoxville	TN	No	1000.0	551.5	35908	0000081956
WTNZ-D	LI	15	T	2C	Knoxville	TN	No	280.0	529.0	19200	0000081278
WVLR-D	LI	36	T	2C	Tazewell	TN	Yes	798.0	430.0	81750	0000097858
WSOC-TV	LI	12	G	C	Charlotte	NC	Yes	3.0		74070	0000074108
WCES-TV	LI	6	T	2E	Wrens	GA	No	7.9	426.0	23937	0000016506
WGTV-D	LI	7	T	2E	Athens	GA	Yes	62.0	327.2	23948	0000132560
WATC-DT	LI	34	T	2E	Atlanta	GA	No	475.0	307.0	13206	0000107129
WNGH-TV	LI	4	T	2E	Chatsworth	GA	No	11.2	573.8	23942	0000106504
WLFGL-D	LI	14	D	2C	Grundy	VA	No	479.0	662.0	37808	0000071597
WLFGL-D	LI	49	T	2C	Grundy	VA	No	1000.0	662.0	37808	BLCDT-20071025A
WAGV1-D	LI	14	H	2C	Harlan	KY	No	479.0	662.0	37809	0000071709
WPXA-TV	LI	16	T	2C	Rome	GA	Yes	687.0	596.0	51969	0000081827

WUPA-D	LI	36	T	2C	Atlanta	GA	No	1000.0	328.6	6900	0000084466
WPCH-TV	LI	31	T	2C	Atlanta	GA	No	805.0	329.0	64033	0000152274
WANF-D	LI	19	T	2C	Atlanta	GA	No	1000.0	329.0	72120	0000205000
WUVG-DT	LI	18	T	2C	Athens	GA	No	1000.0	328.0	48813	0000081094
WBXX-TV	LI	31	T	2C	Crossville	TN	No	834.0	727.5	72971	0000081641
WAGA-TV	LI	27	T	2C	Atlanta	GA	No	1000.0	332.0	70689	0000152298
WXIA-TV	LI	10	T	2C	Atlanta	GA	No	80.0	303.0	51163	0000152840
WAGV-D	LI	51	T	2C	Harlan	KY	No	550.0	577.0	37809	BLCDT-20061012A
WCWG-D	LI	16	H	2C	Lexington	NC	Yes	1000.0	571.9	35385	0000081214
WXII-TV	LI	16	T	2C	Winston-Salem	NC	Yes	1000.0	571.9	53921	0000157823
WUNL-TV	LI	33	T	2E	Winston-Salem	NC	Yes	1000.0	500.2	69360	0000121301