

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of CAROLINA CHRISTIAN BROADCASTING, INC., licensee of full-power digital television station WGGG-DT, Channel 16 in Greenville, South Carolina, in support of this application for modification of Construction Permit 0000024599, which authorizes operation on its post-repack channel, Channel 2. The purpose of this application is to specify an increase in effective radiated power to 33 kW. No change in the proposed site, antenna height or antenna pattern is proposed herein.

Exhibit B is a map upon which the predicted service contours of the maximized facility are plotted. As shown, the community of Greenville is completely encompassed by the proposed 35 dBu city-grade service contour. The elevation pattern for the proposed antenna is provided in Exhibit C. Exhibit D contains the summary results from a TVStudy interference study, which was conducted using a cell size of 2.0 kilometers and an increment spacing of 1.0 kilometer. It concludes that the proposed WGGG-DT facility meets the Commission's *de minimis* interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A facilities. A revised power density calculation appears as Exhibit E.

Due to the diminutive height of the existing WGGG-DT tower and because no change in the overall height or location of the tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, and for the same reasons, antenna structure registration of the tower with the Federal Communications Commission is not required.

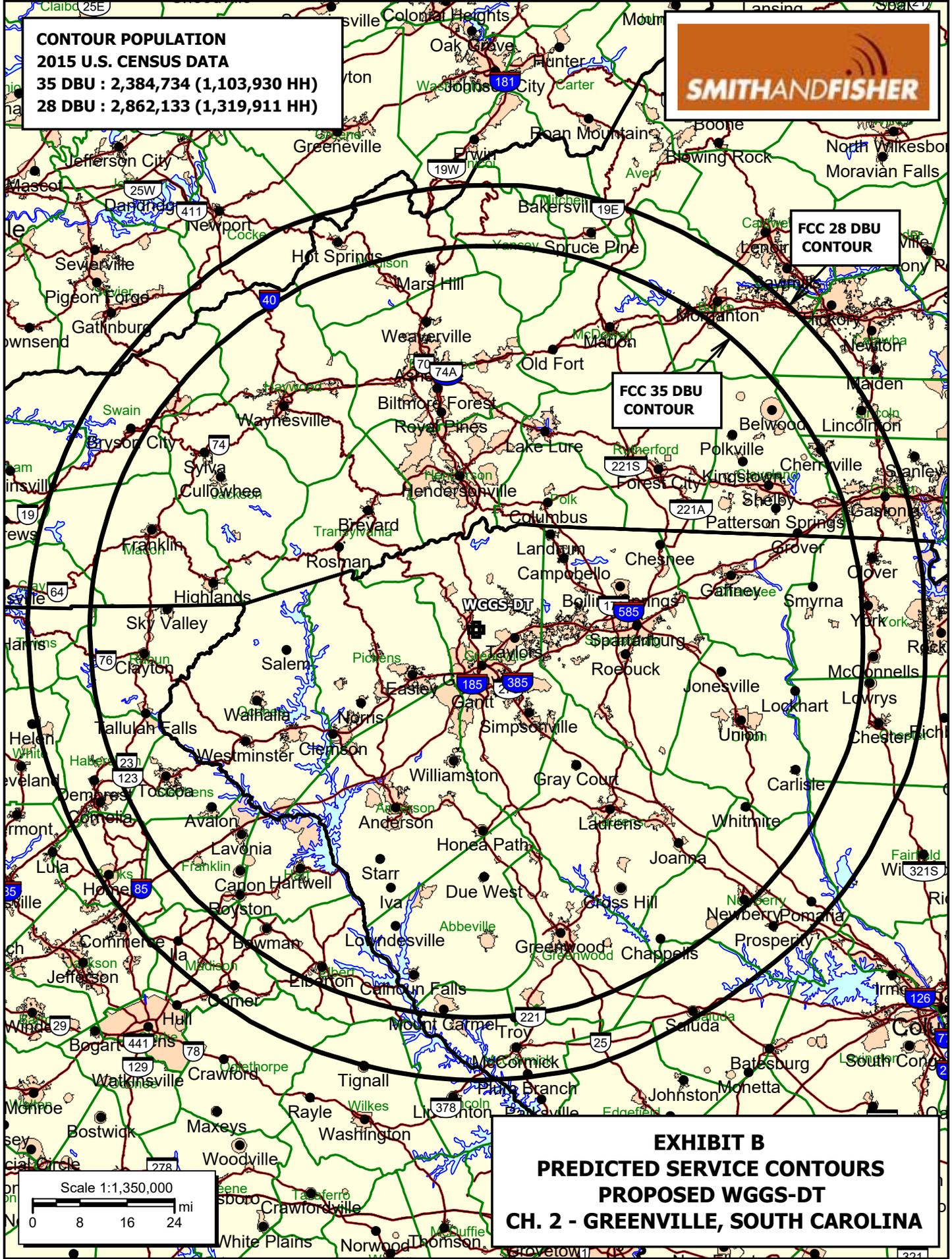
I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is stylized with a large "K" and "F".

KEVIN T. FISHER

October 10, 2017

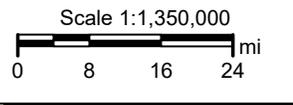
CONTOUR POPULATION
2015 U.S. CENSUS DATA
35 DBU : 2,384,734 (1,103,930 HH)
28 DBU : 2,862,133 (1,319,911 HH)



FCC 28 DBU CONTOUR

FCC 35 DBU CONTOUR

EXHIBIT B
PREDICTED SERVICE CONTOURS
PROPOSED WGG5-DT
CH. 2 - GREENVILLE, SOUTH CAROLINA



ELEVATION PATTERN

EXHIBIT C

Exhibit No.

Date **7 Mar 2017**

Call Letters

Channel **2**

Antenna Type **THA-O4-4/16-1**

Location

Customer

Future fill is available!

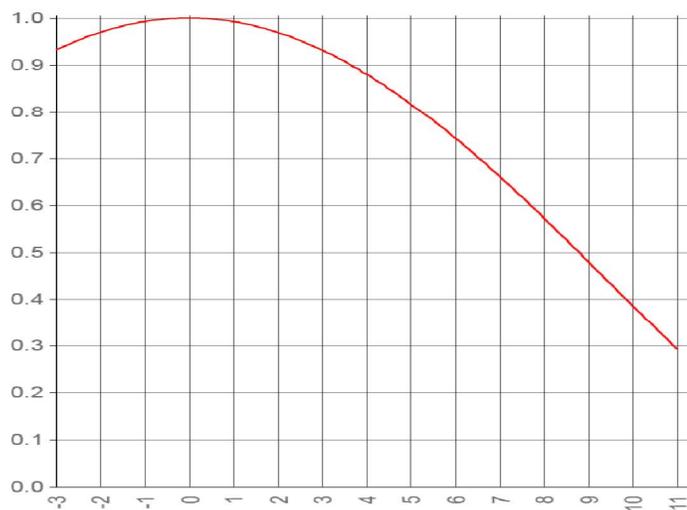
RMS Gain at Main Lobe **4.2 (6.23 dB)**

Beam Tilt **0 Degrees**

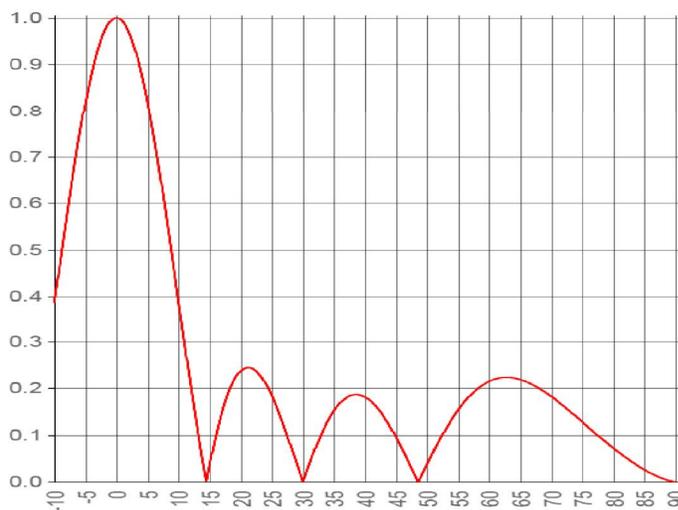
RMS Gain at Horizontal **4.2 (6.23 dB)**

Drawing # **04H042000**

Calculated



Degrees below horizontal



Degrees below horizontal

Angle	Field								
-10	0.386	10	0.386	30	0.000	50	0.038	70	0.183
-9	0.480	11	0.292	31	0.037	51	0.065	71	0.172
-8	0.573	12	0.201	32	0.072	52	0.090	72	0.162
-7	0.661	13	0.115	33	0.103	53	0.113	73	0.151
-6	0.743	14	0.035	34	0.130	54	0.135	74	0.139
-5	0.817	15	0.036	35	0.152	55	0.154	75	0.128
-4	0.881	16	0.098	36	0.169	56	0.171	76	0.116
-3	0.932	17	0.149	37	0.180	57	0.186	77	0.105
-2	0.969	18	0.190	38	0.186	58	0.198	78	0.094
-1	0.992	19	0.219	39	0.186	59	0.208	79	0.083
0	1.000	20	0.237	40	0.181	60	0.215	80	0.072
1	0.992	21	0.244	41	0.172	61	0.220	81	0.062
2	0.969	22	0.242	42	0.158	62	0.223	82	0.052
3	0.932	23	0.230	43	0.140	63	0.223	83	0.042
4	0.881	24	0.210	44	0.119	64	0.222	84	0.034
5	0.817	25	0.184	45	0.096	65	0.219	85	0.026
6	0.743	26	0.152	46	0.070	66	0.214	86	0.018
7	0.661	27	0.116	47	0.044	67	0.208	87	0.012
8	0.573	28	0.078	48	0.016	68	0.200	88	0.007
9	0.480	29	0.039	49	0.011	69	0.192	89	0.002

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TVSTUDY INTERFERENCE ANALYSIS RESULTS
PROPOSED WGGS-DT
CHANNEL 2 – GREENVILLE, SOUTH CAROLINA

Study created: 2017.10.10 15:51:41

Study build station data: LMS TV 2017-10-05 (4)

Proposal: WGGS-TV D2 DT CP GREENVILLE, SC
File number: BLANK0000024599
Facility ID: 9064
Station data: User record
Record ID: 45
Country: U.S.
Zone: II

No protected stations found.

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D2
Latitude: 34 56 26.40 N (NAD83)
Longitude: 82 24 40.40 W
Height AMSL: 660.1 m
HAAT: 354.0 m
Peak ERP: 33.0 kW
Antenna: Omnidirectional
Elev Patrn: Generic

28.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	33.0 kW	331.6 m	121.2 km
45.0	33.0	362.0	122.5
90.0	33.0	351.6	122.0
135.0	33.0	352.1	122.0
180.0	33.0	364.7	122.6
225.0	33.0	365.8	122.7
270.0	33.0	355.1	122.2
315.0	33.0	334.8	121.3

Database HAAT does not agree with computed HAAT

Database HAAT: 354 m Computed HAAT: 352 m

**Proposal service area extends beyond baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 748.7 km

Distance to Mexican border: 1707.6 km

Conditions at FCC monitoring station: Powder Springs GA

Bearing: 241.2 degrees Distance: 243.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 292.8 degrees Distance: 2085.1 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

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

Maximum new IX to LPTV: 2.00%

No IX check failures found.

POWER DENSITY CALCULATION

PROPOSED WGGG-DT
CHANNEL 2 – GREENVILLE, SOUTH CAROLINA
[MODIFICATION OF CONSTRUCTION PERMIT 0000024599]

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 4.01 kW, an antenna radiation center 45 meters above ground, and the specific elevation pattern of the proposed Dielectric antenna, maximum power density two meters above ground of 0.047 mW/cm^2 is calculated to occur 22 meters from the base of the tower. Since this is only 23.5 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 2 (54-60 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

In addition, once the new WGGG-DT antenna is installed, a power density survey of the tower site will be conducted in order to ensure compliance with the Commission's RF human exposure standards.

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.