



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

MINOR MODIFICATION TO A LICENSED TELEVISION BROADCAST STATION

CALL SIGN: WEBA-TV
FACILITY ID: 61003
FCC FILE NO.: 0000081199
LOCATION: ALLENDALE, SC

Prepared For:

South Carolina Educational
TV Commission
1041 George Rogers Boulevard
Columbia, SC 29201

Prepared By:

Ryan Wilhour
Consulting Engineer
Kessler and Gehman Associates
507 NW 60th Street, Suite D
Gainesville, FL 32607-2055
352-332-3157 Extension 3
ryan@kesslerandgehman.com
www.kesslerandgehman.com

October 9, 2019

TABLE OF CONTENTS

1.0 MINOR MODIFICATION APPLICATION..... 2
2.0 ALLOCATION ANALYSIS 2
3.0 § 73.683 AND § 73.625 PREDICTED CONTOURS 2
4.0 RADIO FREQUENCY RADIATION COMPLIANCE..... 3
5.0 CERTIFICATION..... 4
APPENDIX A – Tower Elevation Profile 5
APPENDIX B – TVStudy V2.2.5 Allocation Analysis 6
APPENDIX C – § 73.683 and § 73.625 Predicted Contours 7
APPENDIX D – Far Field Exposure to RF Emissions 8

1.0 MINOR MODIFICATION APPLICATION

South Carolina Educational TV Commission is the licensee of a television broadcast station having call sign WEBA-TV facility ID 61003. It is herein proposed to increase the ERP from 370kW to 405kW and replace the licensed top mounted horizontally polarized directional antenna with a similar model capable of elliptical polarization.

Pursuant to 47 CFR § 73.3572 the instant application is considered a minor modification since:

- No change in frequency is proposed
- No change in community of licensed is proposed

2.0 ALLOCATION ANALYSIS

Appendix B are the summarized results from TVStudy V2.2.5 which illustrates that there are no interference failures.

3.0 § 73.683 AND § 73.625 PREDICTED CONTOURS

Appendix C illustrates the § 73.683 predicted F(50,90) 39.5 dB μ V/m noise limited protected contour and the § 73.625 predicted F(50,90) 48.0 dB μ V/m principal community coverage contour. As illustrated the 48 dB μ V/m contour completely subsumes the principal community of license as required.

The Appendix C predicted coverage contours were generated using V-Soft Probe-3¹ software in accordance with § 73.625(b) methodology using F(50,90) propagation curves. The average terrain was extracted from three arc second terrain along eight equally spaced cardinal radials from 3 kilometers to 16 kilometers from the site and beginning from true north.

¹ Version 3.101

4.0 RADIO FREQUENCY RADIATION COMPLIANCE

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in OET Bulletin 65, Edition 97-01. The RFR analysis is conducted pursuant to the following methodology:

Terrain² extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360-degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

The resulting RFR study in Appendix D demonstrates that the peak exposure is 0.193% of the most restrictive permissible exposure threshold. Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is

² Terrain extraction is based upon a 3 arc second point spacing terrain database.

within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of the proposed facility were not taken into account. The instant application is compliant with the FCC limits for human exposure to RF radiation and is excluded from further environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

A chain link fence encloses the support structure and the applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off to protect maintenance workers on the tower.

5.0 CERTIFICATION

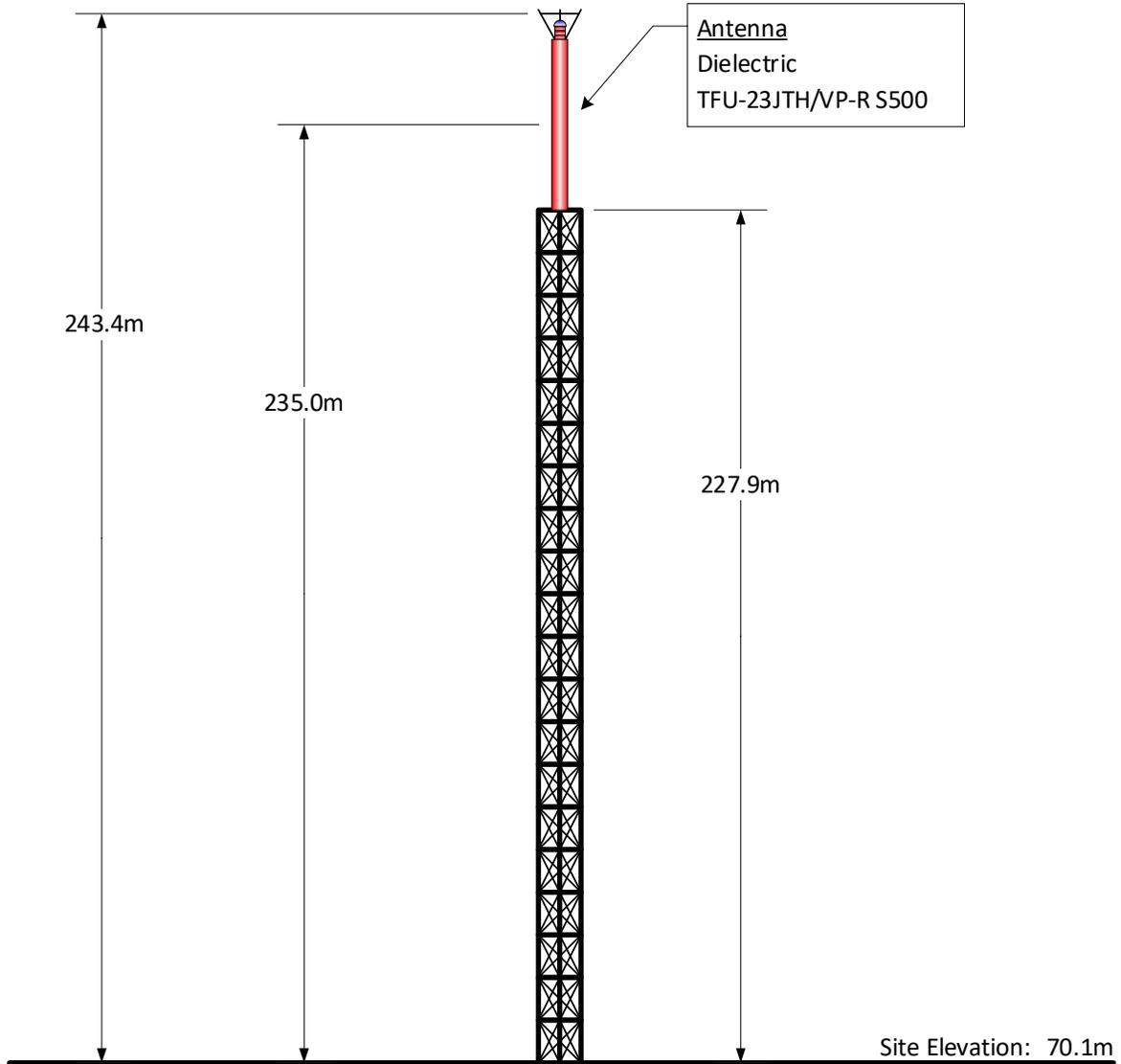
The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on October 9, 2019

Ryan Wilhour



Consulting Engineer

APPENDIX A – Tower Elevation Profile



Antenna CRAGL:	235.0 m
Antenna CRAMSL:	305.1 m
Antenna HAAT:	240.4 m

NAD 83 Coordinates:	
N. Latitude:	33° 11' 16.0"
W. Longitude:	81° 23' 49.5"
FCC Tower Registration Number:	1059177
FAA Study Number	2004-ASO-3526-OE

NOTE: NOT TO SCALE

APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2019.10.09 14:52:54
Study build station data: LMS TV 2019-10-08
Proposal: WEBA-TV D21 DT LIC ALLENDALE, SC
File number: WEBA Proposed
Facility ID: 61003
Station data: User record
Record ID: 4262
Country: U.S.
Zone: II

Search options:
Non-U.S. records included
Baseline record excluded if station has CP
Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WUNF-TV	D20	DD	CP	ASHEVILLE, NC	BLANK0000029742	249.7 km
No	WCBD-TV	D20	DT	LIC	CHARLESTON, SC	BLANK0000081288	160.9
No	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDT20090303ACR	427.0
No	WJEB-TV	D21	DT	CP	JACKSONVILLE, FL	BLANK0000028163	324.0
Yes	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	279.7
Yes	WUNG-TV	D21	DT	CP	CONCORD, NC	BLANK0000034415	251.9
No	WUNJ-TV	D21	DT	CP	WILMINGTON, NC	BLANK0000075396	318.8
No	WJCL	D22	DT	LIC	SAVANNAH, GA	BLANK0000029019	125.7
Yes	WACH	D22	DT	CP	COLUMBIA, SC	BLANK0000080098	118.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D21
Latitude: 33 11 16.00 N (NAD83)
Longitude: 81 23 49.50 W
Height AMSL: 305.1 m
HAAT: 240.4 m
Peak ERP: 405 kW
Antenna: Dielectric TFU-23JTH/VP-R S500 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

39.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	42.5 kW	230.9 m	70.3 km
45.0	11.4	242.5	64.4
90.0	2.86	245.7	57.5
135.0	8.99	234.3	62.7
180.0	12.1	247.0	65.0
225.0	20.4	249.0	67.8
270.0	205	239.9	79.2
315.0	334	234.1	81.4

Distance to Canadian border: 947.6 km

Distance to Mexican border: 1698.9 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 284.6 degrees Distance: 317.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 296.8 degrees Distance: 2251.7 km

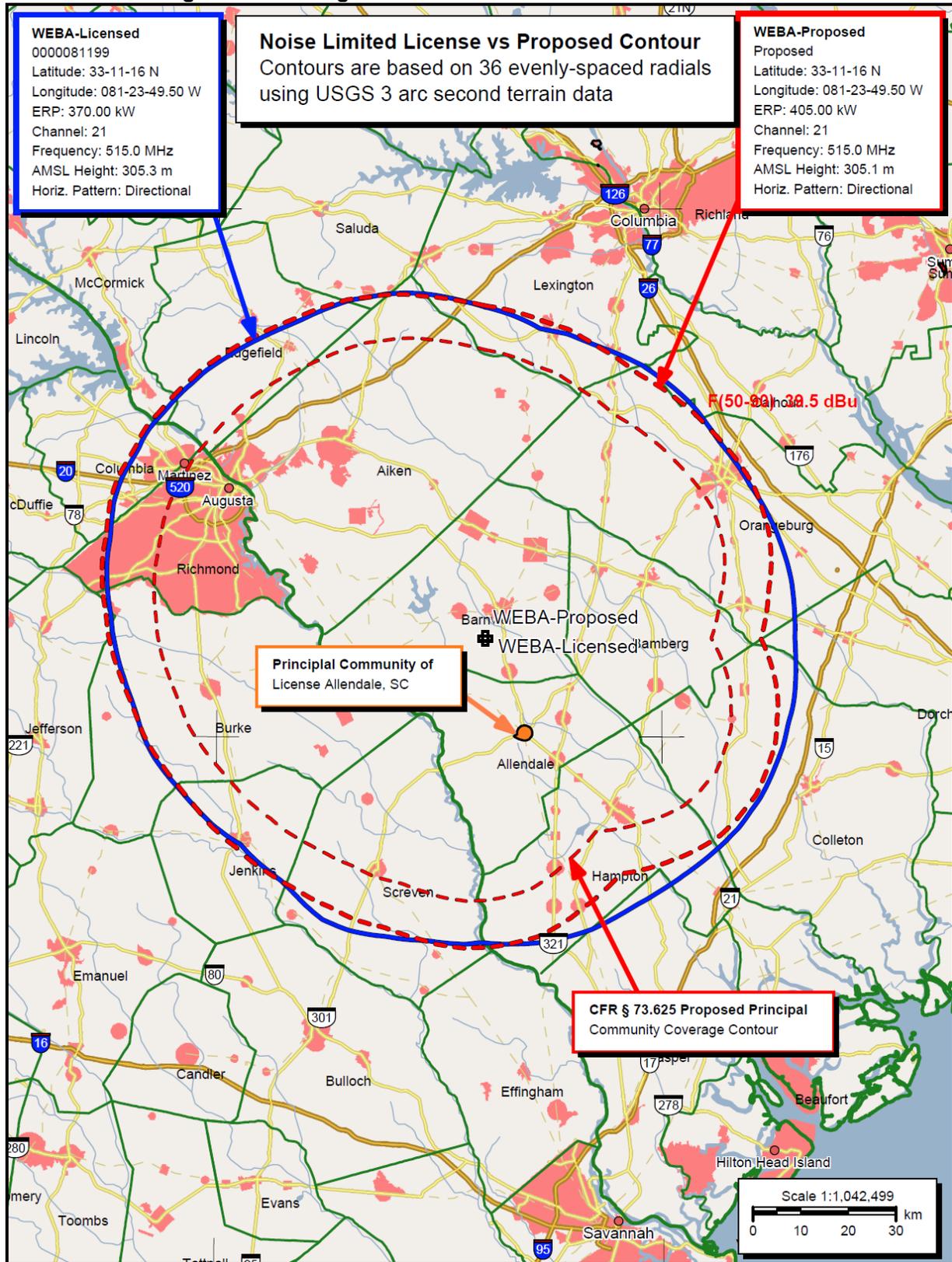
No land mobile station failures found

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..

APPENDIX C – § 73.683 and § 73.625 Predicted Contours



APPENDIX D – Far Field Exposure to RF Emissions

