



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

**APPLICATION FOR
SPECIAL TEMPORARY
AUTHORITY FOR A
TRANSITIONING
INCENTIVE AUCTION
BROADCAST
TELEVISION STATION**

CALL SIGN: WRJA-TV
FACILITY ID: 61012
LOCATION: SUMTER, SC

Prepared For:

South Carolina Educational
Television Commission
1101 George Rogers Boulevard
Columbia, SC 29201

Prepared By:

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July 30, 2019

1.0 REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Kessler and Gehman Associates, Inc. has been retained by South Carolina Education Television Commission, licensee of WRJA-TV to prepare an engineering Special Temporary Authority (STA) to operate the channel 28 pre-transition licensed¹ facility through an interim antenna mounted below the licensed antenna to help facilitate the decommissioning of the pre-transition facility so that the construction permitted² post transition facility may built.

Grant of this STA request would be in the public interest because it will help facilitate a timely transition from the pre-transition to the post-transition facility and in doing so preserve most of the stations service area.

2.0 PREDICTED COVERAGE CONTOUR

Appendix B demonstrates predicted noise limited coverage contours in accordance with the method described in 47 CFR Section 73.684 utilizing the appropriate F(50,90) propagate curves. Appendix B clearly illustrates that the proposed STA contour is 100% subsumed by the licensed contour and thus no new interference to surrounding stations shall occur. The STA shall substantially achieve its goal of providing comparable coverage to its viewers while the necessary work to construct the post transition facility is in progress.

3.0 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:

¹ FCC File No.: 20040805ABA

² FCC File No.: 0000025019

Terrain³ 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 C demonstrates that the peak exposure is 0.26% 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 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

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

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.

4.0 CERTIFICATION

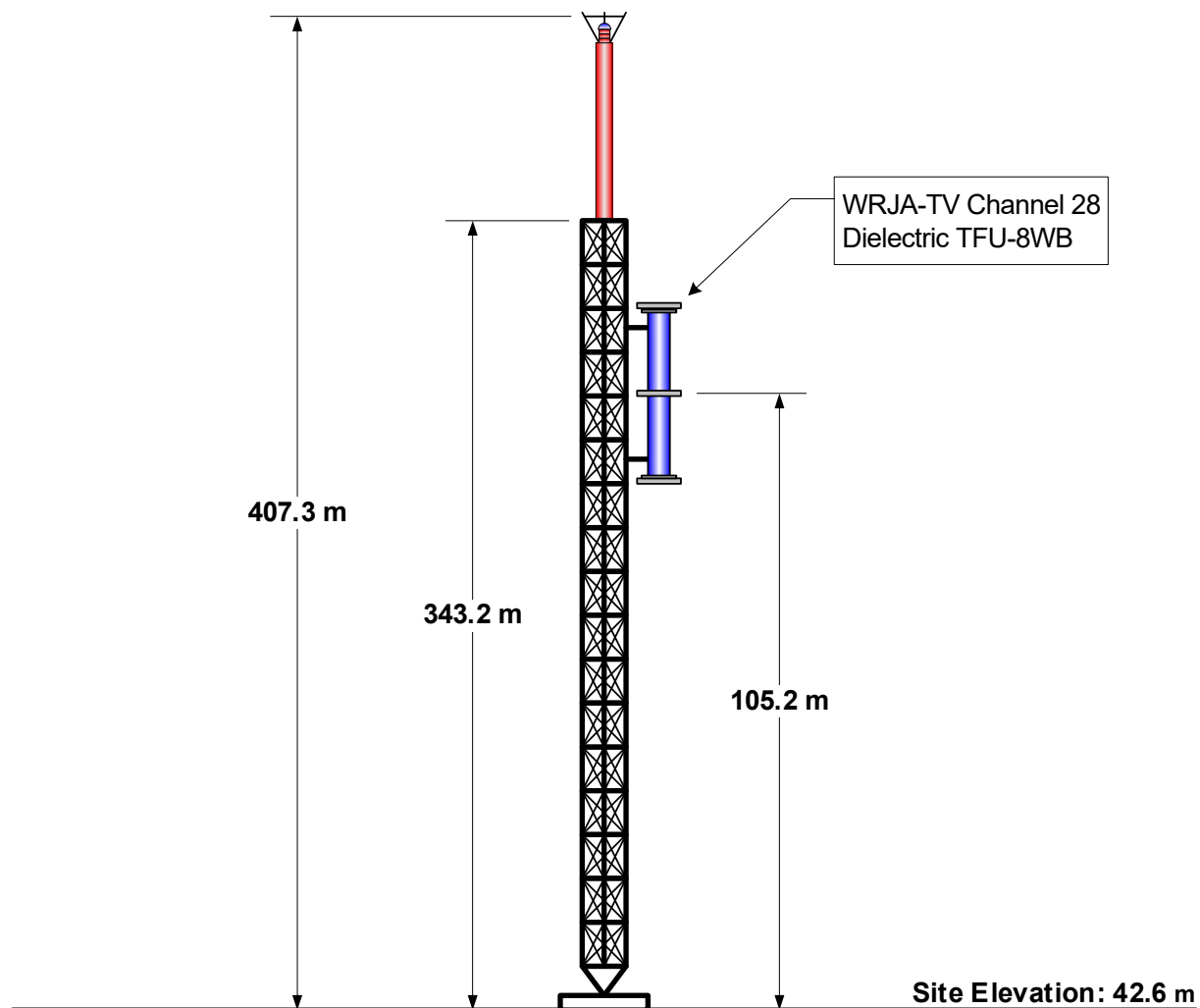
I, Ryan Wilhour, am an engineering associate of Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida and have been working in the field of radio and television broadcast consulting since 1996. The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge.

Ryan Wilhour



Consulting Engineer
July 30, 2019

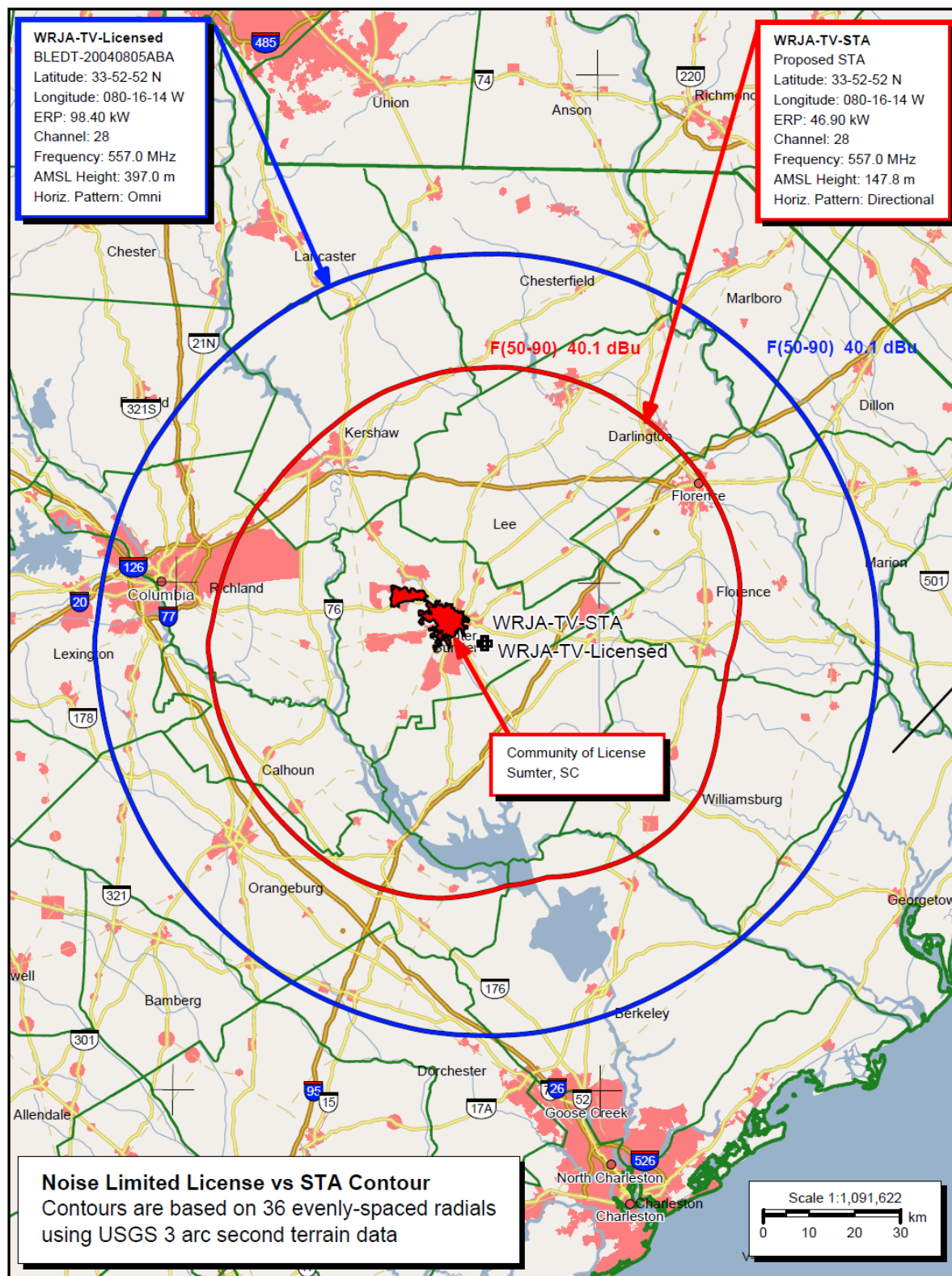
APPENDIX A – Tower Elevation Profile



Radiation Center AGL	105.2 m
Radiation Center AMSL:	147.8 m
Radiation Center HAAT:	106.5 m
NOTE: NOT TO SCALE	

COORDINATES (NAD 83):	
N. LATITUDE	33° 52' 52.0"
W. Longitude:	80° 16' 14.0"
FCC Tower Registration Number: 1059184	

APPENDIX B – Section 73.625(a) Community of License Coverage Map



APPENDIX C – Far Field Exposure to RF Emissions

