



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

APPLICATION FOR A NEW BROADCAST AUXILIARY TELEVISION STATION

CALL SIGN: WLED-TV
FACILITY ID: 69328
LOCATION: LITTLETON, NH

Prepared For:

New Hampshire Public
Broadcasting
268 Mast Road
Durham, NH 03824

Prepared By:

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October 2, 2020

1.0 PROPOSED BROADCAST AUXILIARY FACILITY

Kessler and Gehman Associates, Inc. has been authorized by New Hampshire Public Broadcasting, licensee of WLED-TV to prepare a new broadcast auxiliary television station for WLED-TV.

2.0 PREDICTED COVERAGE CONTOUR

Appendix B demonstrates the predicted noise limited coverage contours of the proposed auxiliary facility and its associated main license facility having FCC File No.: 0000122384. The contours were generated 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 auxiliary contour is 100% subsumed by the construction permitted contour. The proposed auxiliary broadcast facility shall substantially achieve its goal of providing comparable coverage to its viewers while the main antenna is down for occasional maintenance.

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:

Terrain¹ 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 2.85% 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 environmental processing since no changes are proposed to the tower structure in order to accommodate the proposed antenna.

¹ Terrain extraction is based upon a 3 arc second point spacing terrain database.

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

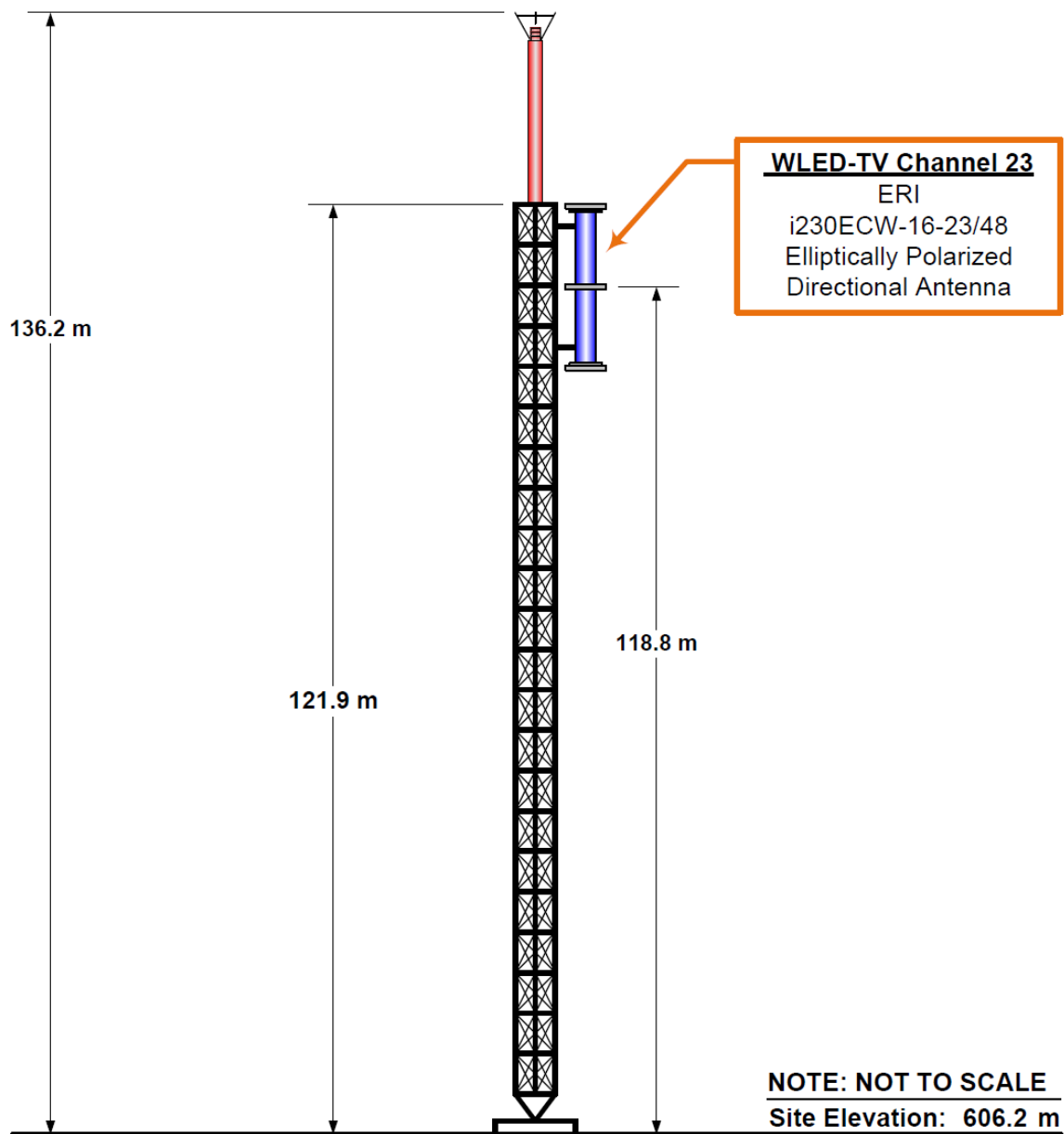
I, Ryan Wilhour, am an engineering associate of Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida and have been working in the field of radio and television broadcast consulting since 1996. The foregoing statement and the report regarding the aforementioned engineering work are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

Ryan Wilhour



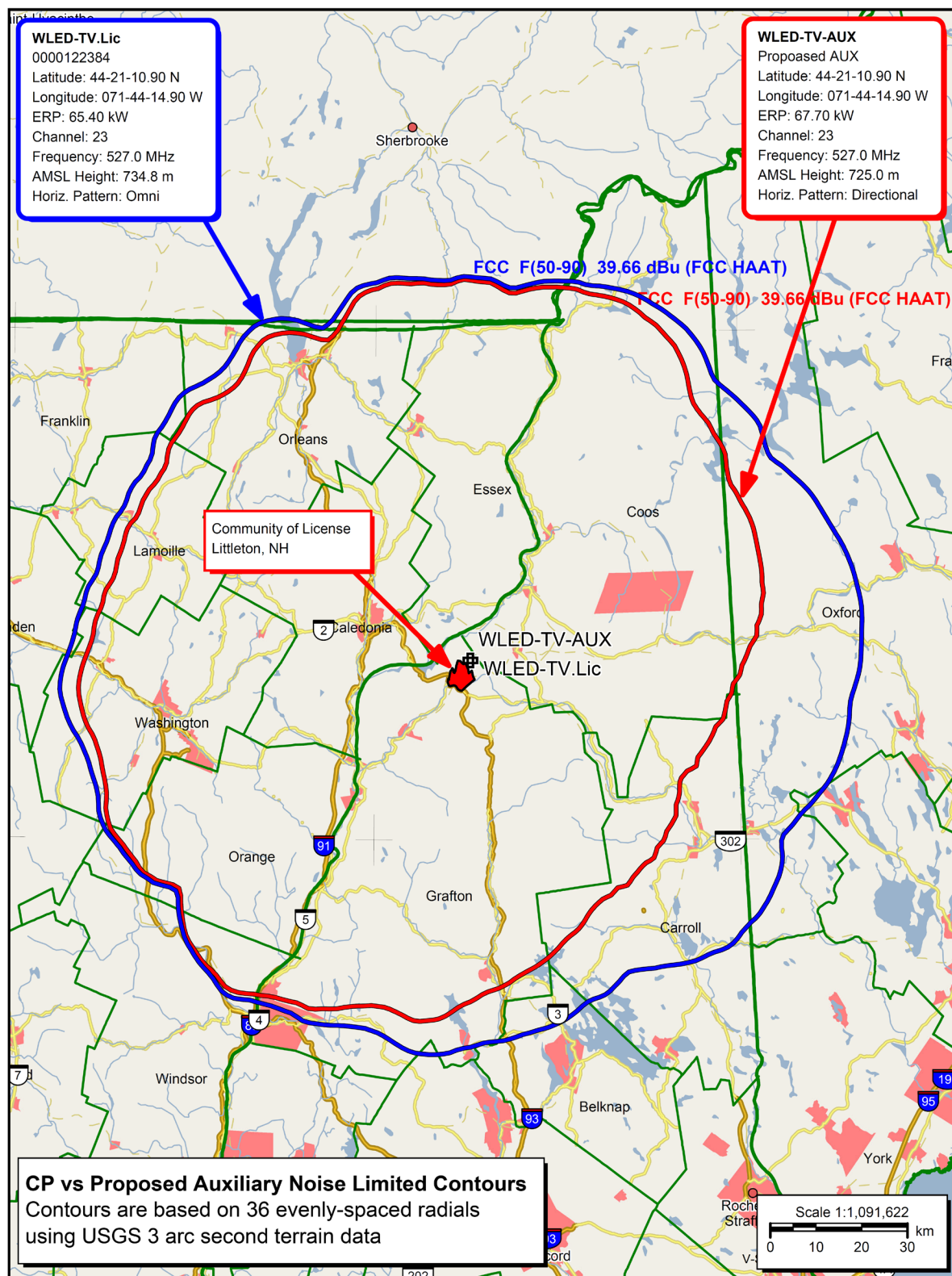
Consulting Engineer
October 2, 2020

APPENDIX A – Tower Elevation Profile



Radiation Center AMSL:	725.0 m	ASR Coordinates (NAD 83):	
Radiation Center HAAT:	372.1 m	N. Latitude	44° 21' 10.9"
FCC ASR Number:	1034698	W. Longitude	71° 44' 14.9"

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



APPENDIX C – Far Field Exposure to RF Emissions

