Kessler and Gehman Associates
Consultants • Broadcast • Wireless

APPLICATION FOR SPECIAL TEMPORARY AUTHORITY OF A TRANSITIONING TELEVISION BROADCAST STATION

CALL SIGN: WLED-TV
FACILITY ID: 69328
FCC FILE NO.: 0000087374
LOCATION: LITTLETON, NH

Prepared For:

New Hampshire Public Broadcasting
268 Mast Road
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Prepared By:

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1.0 PROPOSED SPECIAL TEMPORARY AUTHORITY

Kessler and Gehman Associates, Inc. has been authorized by New Hampshire Public Broadcasting, licensee of WLED-TV to prepare an engineering Special Temporary Authority ("STA") to operate the licensed[1] WLED-TV facility with increased ERP. No other changes are proposed.

WLED has a Construction Permit[2] ("CP") authorization for a top mount omni-directional antenna with a center of radiation of 128.6m AGL which radiates an ERP of 65.4 kW. The licensed facility has a side mount directional antenna with a center of radiation of 118.8m AGL which radiates an ERP of 48 kW. The grant of the proposed STA shall increase the coverage area of the license facility until the CP can be built out and thus serves the best interest of the public.

2.0 PREDICTED COVERAGE CONTOUR

Appendix C demonstrates the predicted noise limited coverage contours of the proposed STA facility and the CP facility. 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 C clearly illustrates that the proposed STA contour is 100% subsumed by the CP contour. The instant STA facility shall substantially achieve its goal of providing coverage to its viewers while the new main CP antenna is being installed.

[1] FCC File No.: 0000087374
[2] FCC File No.: 0000080312

3.0 TVSTUDY ANALYSIS

Appendix B is an interference analysis summary generated by TVStudy v2.2.5 which was run using the following build and search options:

- Non-U.S. records included
- Baseline record excluded if station has CP

Appendix B demonstrates that the proposed STA has no interference check failures.

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:

> Terrain[3] 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:

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

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 2.75% 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.

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.

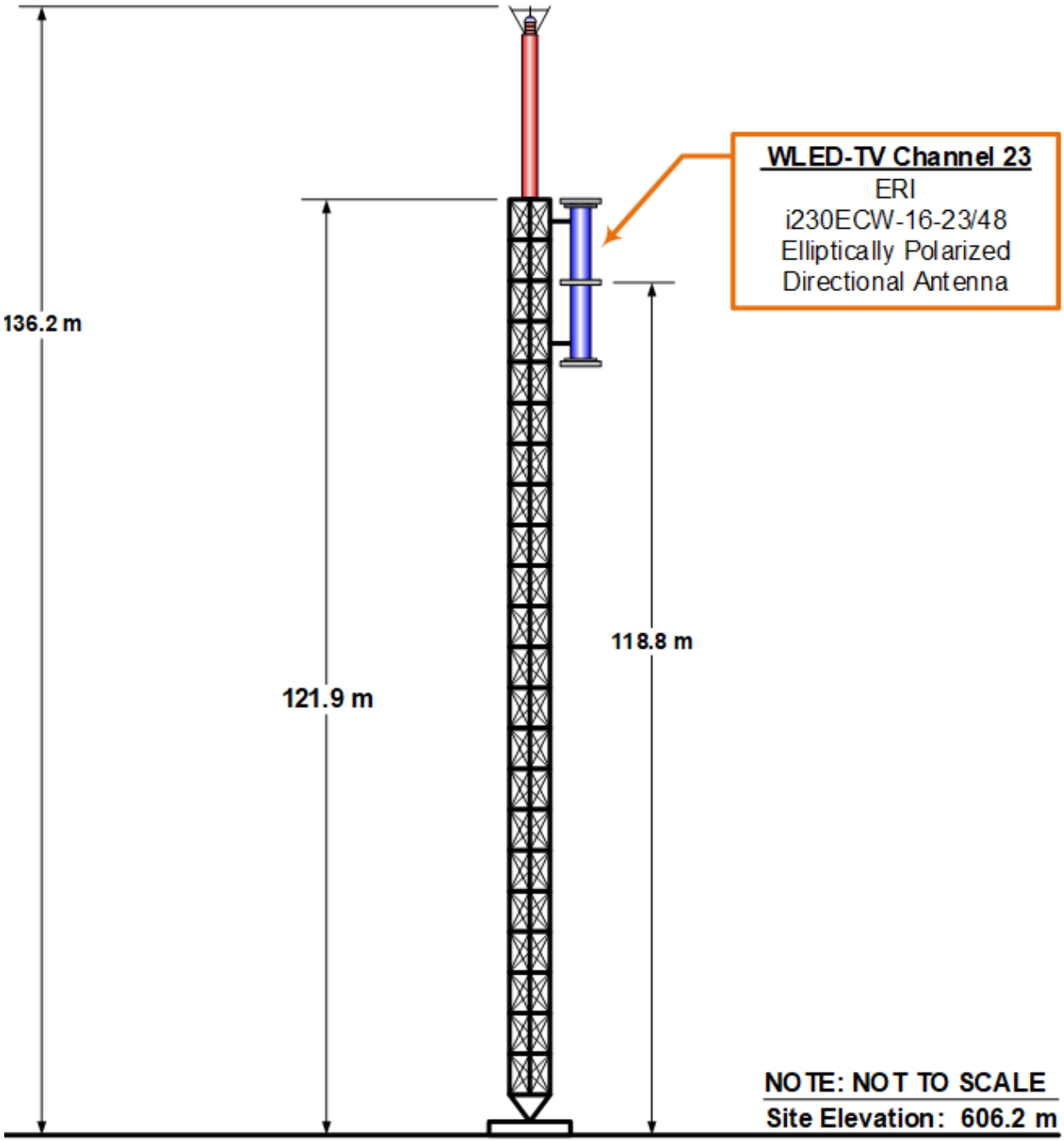
5.0 CERTIFICATION

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
November 8, 2019

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 – TVStudy V2.2.5 Allocation Analysis

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Study created: 2019.11.08 11:20:17

Study build station data: LMS TV 2019-11-07

    Proposal: WLED-TV D23 DT LIC LITTLETON, NH
 File number: WLED-TV STA
 Facility ID: 69328
Station data: User record
   Record ID: 4323
     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   WBPX-TV   D22        DT  LIC     BOSTON, MA               BLANK0000075858        219.7 km
No   WVMA-CD   D22        DC  CP      WINCHENDON, MA           BLANK0000033356        155.2
No   WCWN      D22        DT  LIC     SCHENECTADY, NY          BLANK0000083798        265.4
Yes  WPXG-TV   D23        DT  LIC     CONCORD, NH              BLANK0000078658        134.2
Yes  WNPI-DT   D23        DT  LIC     NORWOOD, NY              BLEDT20050715ABZ       248.1
No   WFTY-DT   D23        DT  LIC     SMITHTOWN, NY            BLCDT20120427ABO       397.6
No   WHSU-CD   D23        DC  CP      SYRACUSE, NY             BLANK0000034940        383.8
No   WIPL      D24        DT  LIC     LEWISTON, ME             BLANK0000075152         96.2
No   WTEN      D24        DT  LIC     ALBANY, NY               BLANK0000082692        265.4
No   CIVS-DT   D24        DT  LIC     SHERBROOKE, QC           BLANKCANADA311         113.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D23
   Latitude:  44 21 10.90 N (NAD83)
  Longitude:  71 44 14.90 W
Height AMSL: 725.0 m
       HAAT: 372.1 m
   Peak ERP: 65.4 kW
    Antenna: Electronics Research Inc-i230ECW-16-23/4 (ID 1005850) 295.0 deg
Elev Pattrn: Generic
  Elec Tilt: 0.75

39.7 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg   65.0 kW   351.7 m   82.7 km
 45.0       21.2      330.5     73.6
 90.0       1.38      372.6     60.3
135.0      0.942      356.3     57.5
180.0       16.7      361.3     74.6
225.0       62.8      411.4     86.9
270.0       38.3      425.8     84.4
315.0       37.8      366.9     80.5

**Proposal is within coordination distance of Canadian border
Distance to Canadian border: 73.2 km

Distance to Mexican border: 3044.6 km

Conditions at FCC monitoring station: Belfast ME
Bearing: 86.3 degrees   Distance: 211.1 km

Proposal is not within the West Virginia quiet zone area
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Conditions at Table Mountain receiving zone:
Bearing: 272.1 degrees   Distance: 2774.5 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%


---- Below is IX received by proposal WLED-TV STA ----

Proposal receives 2.09% interference from scenario 1
No IX check failures found.
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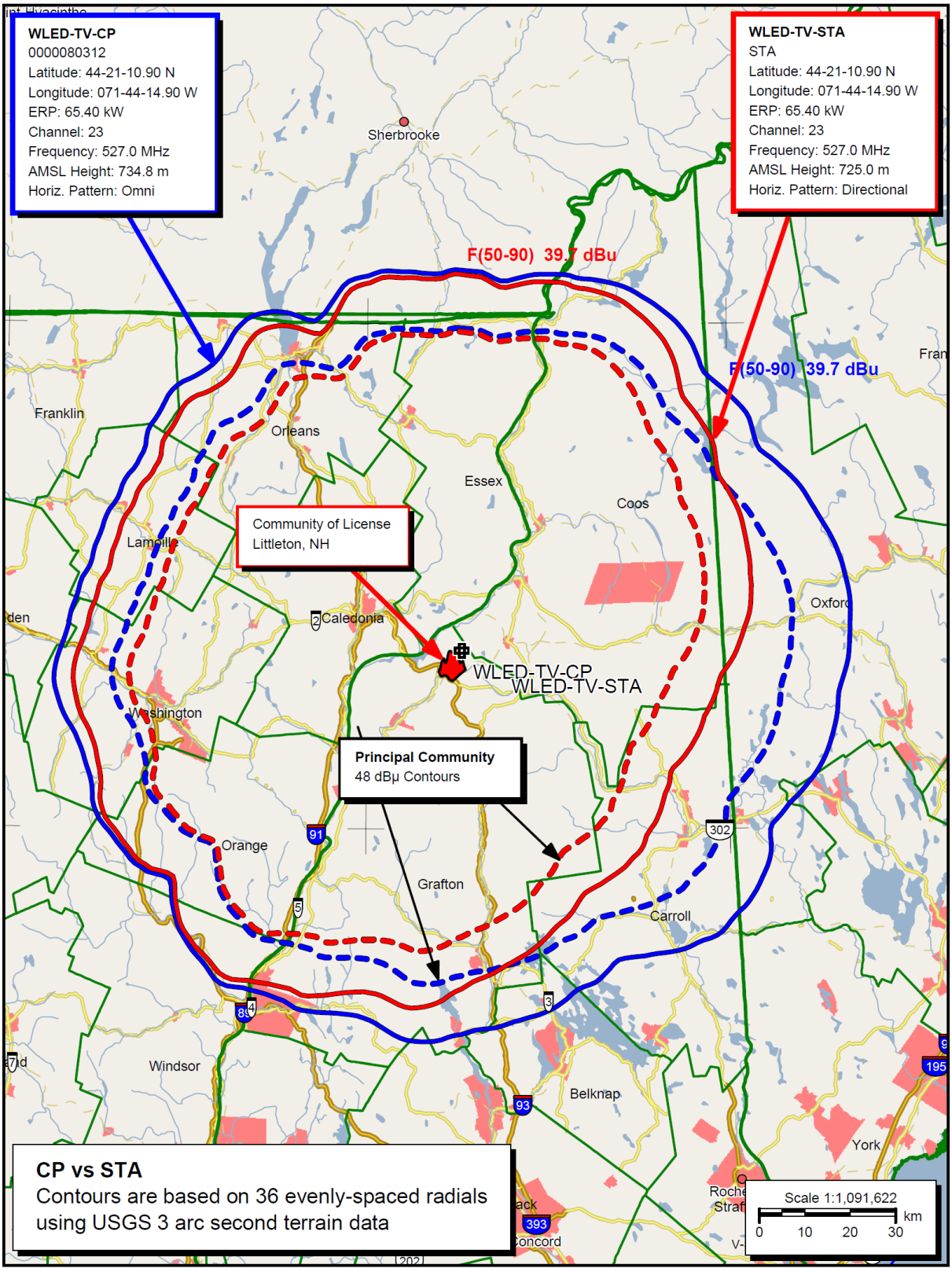
APPENDIX C – Section 73.625(a) Community of License Coverage Map



APPENDIX D – Far Field Exposure to RF Emissions