



**Kessler and Gehman Associates**  
Consultants • Broadcast • Wireless

**MINOR MODIFICATION TO A  
CONSTRUCTION PERMITTED  
TELEVISION BROADCAST  
STATION**

**CALL SIGN: WLTX (TV)**  
**FACILITY ID: 37176**  
**FCC FILE NO.: 0000028035**  
**LOCATION: COLUMBIA, SC**

**Prepared For:**

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## 1.0 INTRODUCTION AND SCOPE OF WORK

Tegna, Inc. the licensee of a television broadcast station having call sign WLTX(TV), and facility ID 37176. WLTX(TV) is permitted<sup>1</sup> to operate at Antenna Structure Registration Number (ASRN) 1044489. It has been discovered that the permitted antenna center of radiation height was erroneously filed and must be corrected from 478.2 m to 509.0 m above ground level. The increased height will also require a power reduction from 951KW to 700 kW so as to not violate the FCC's expansion application filing freeze.

## 2.0 ALLOCATION ANALYSIS

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

## 3.0 PREDICTED CONTOUR ANALYSIS AND EXPANSION FILING FREEZE

Appendix C illustrates the predicted noise limited coverage contours of the proposed and permitted facilities, as well as the Section 73.625(a) F(50,90) 48 dB $\mu$  City Grade Contour which subsumes the entire community of license of Columbia, SC. The proposed F(50,90) 38.8 dB $\mu$  contour does not encroach beyond the permitted F(50,90) 38.8 dB $\mu$  contour and thus does not violate the FCC expansion application freeze currently in place. The contours were generated by TVStudy V2.2.5 in accordance with the method described in 47 CFR Section 73.684 utilizing the appropriate F(50,90) propagate curves.

## 4.0 SECTION 73.622(f)(5) - LARGEST STATION IN THE MARKET ANALYSIS

The instant application contains a TVStudy exhibit which indicates that the proposed 700kW ERP exceeds the 437kW maximum allowable ERP threshold. Section 73.622(f)(5) of the FCC rules indicate that licensees and permittees may

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<sup>1</sup> FCC File No.: 0000028035

request an increase in either ERP in some azimuthal direction or antenna HAAT, or both, up to that needed to provide the same geographic coverage area as the largest station within their market, whichever would allow the largest service area.

WLTX(TV) is associated with the Columbia, SC DMA. A noise limited contour analysis of all the stations associated with the Columbia, SC DMA determined that the licensed WIS(TV) station having FCC File No.: BLCDDT-20090624ABZ has the largest geographical coverage area in the DMA. WIS(TV) and the herein proposed WLTX(TV) facility have a geographical coverage area of 46,461.5 km<sup>2</sup> and 34,720.8 km<sup>2</sup> respectively; thus, the proposed facility is compliant with Section 73.622(f)(5) of the rules and may exceed the otherwise applicable 437kW ERP threshold.

## **5.0 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<sup>2</sup> 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.

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<sup>2</sup> Terrain extraction is based upon a 3 arc second point spacing terrain database.

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 0.11% 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.

## 6.0 CERTIFICATION

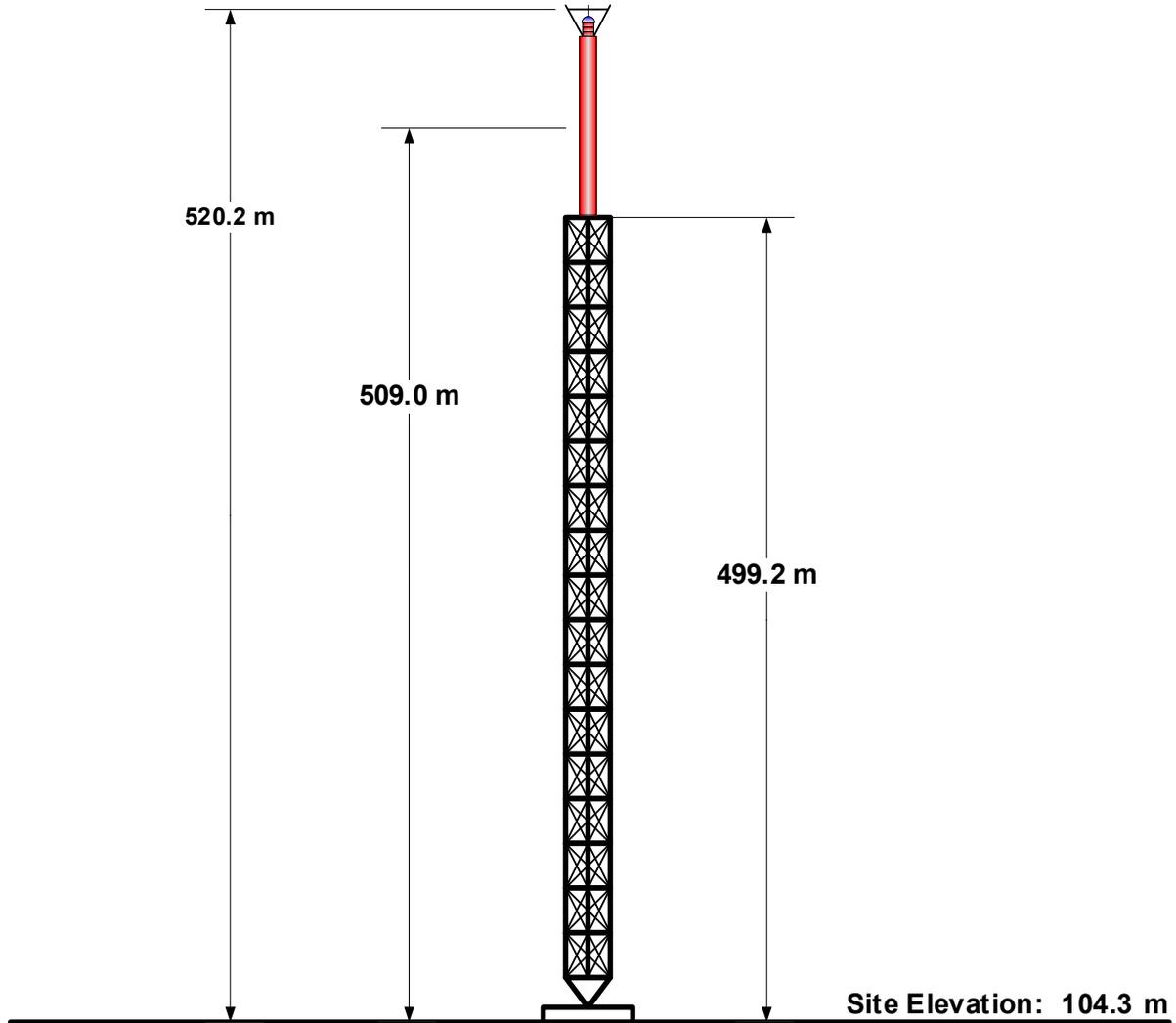
The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on December 4, 2018

Ryan Wilhour



Consulting Engineer

**APPENDIX A – Tower Elevation Profile**



<b>Overall Height AGL:</b>	<b>520.2 m</b>	<b>COORDINATES (NAD 83):</b>
<b>Overall Height AMSL:</b>	<b>624.5 m</b>	<b>N. LATITUDE 35° 05' 50.0"</b>
<b>Radiation Center AGL</b>	<b>509.0 m</b>	<b>W. Longitude: 80° 45' 50.0"</b>
<b>Radiation Center AMSL:</b>	<b>613.3 m</b>	
<b>Radiation Center HAAT:</b>	<b>531.5 m</b>	<b>FCC Tower Registration Number: 1044489</b>

**NOTE: NOT TO SCALE**

## APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2018.12.04 09:36:32

Study build station data: LMS TV 2018-12-04

Proposal: WLTX D15 DT CP COLUMBIA, SC  
File number: WLTX CP Modification  
Facility ID: 37176  
Station data: User record  
Record ID: 3600  
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	WRDC	D14	DT	CP	DURHAM, NC	BLANK0000034511	268.5 km
No	WHKY-TV	D14	DD	CP	HICKORY, NC	BLANK0000034548	159.5
No	WRBL	D15	DT	LIC	COLUMBUS, GA	BLCDT20061013ABV	423.3
Yes	W21CK-D	D15	DC	CP	CHARLOTTE, NC	BLANK0000034509	122.9
Yes	WRAZ	D15	DT	CP	RALEIGH, NC	BLANK0000034036	268.9
Yes	WTNZ	D15	DT	CP	KNOXVILLE, TN	BLANK0000055117	359.0
No	WAGT-CD	D16	DC	LIC	AUGUSTA, GA	BLANK0000001455	136.3
No	WSAV-TV	D16	DT	LIC	SAVANNAH, GA	BLANK0000055021	232.0
No	WXII-TV	D16	DT	CP	WINSTON-SALEM, NC	BLANK0000034697	255.7
Yes	WJPM-TV	D16	DT	CP	FLORENCE, SC	BLANK0000025028	96.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D15  
Latitude: 34 5 50.00 N (NAD83)  
Longitude: 80 45 50.00 W  
Height AMSL: 613.3 m  
HAAT: 531.5 m  
Peak ERP: 700 kW  
Antenna: Dielectric TFU-29JTH/VP-R S260 0.0 deg  
Elev Pattn: Generic  
Elec Tilt: 0.75

38.8 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	29.7 kW	530.6 m	89.9 km
45.0	52.6	566.9	97.1
90.0	73.5	562.3	99.6
135.0	271	538.3	109.6
180.0	563	526.3	115.6
225.0	657	489.2	114.5
270.0	351	512.1	110.2
315.0	135	526.1	102.4

ERP exceeds maximum  
ERP: 700 kW ERP maximum: 437 kW

Distance to Canadian border: 854.5 km

Distance to Mexican border: 1794.7 km

Conditions at FCC monitoring station: Powder Springs GA  
Bearing: 267.0 degrees Distance: 365.9 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 294.4 degrees Distance: 2260.8 km

No land mobile station failures found

Study cell size: 2.00 km  
Profile point spacing: 1.00 km

**WLTX(TV) – Minor Modification to a Permitted Television Broadcast Station**  
Columbia, SC

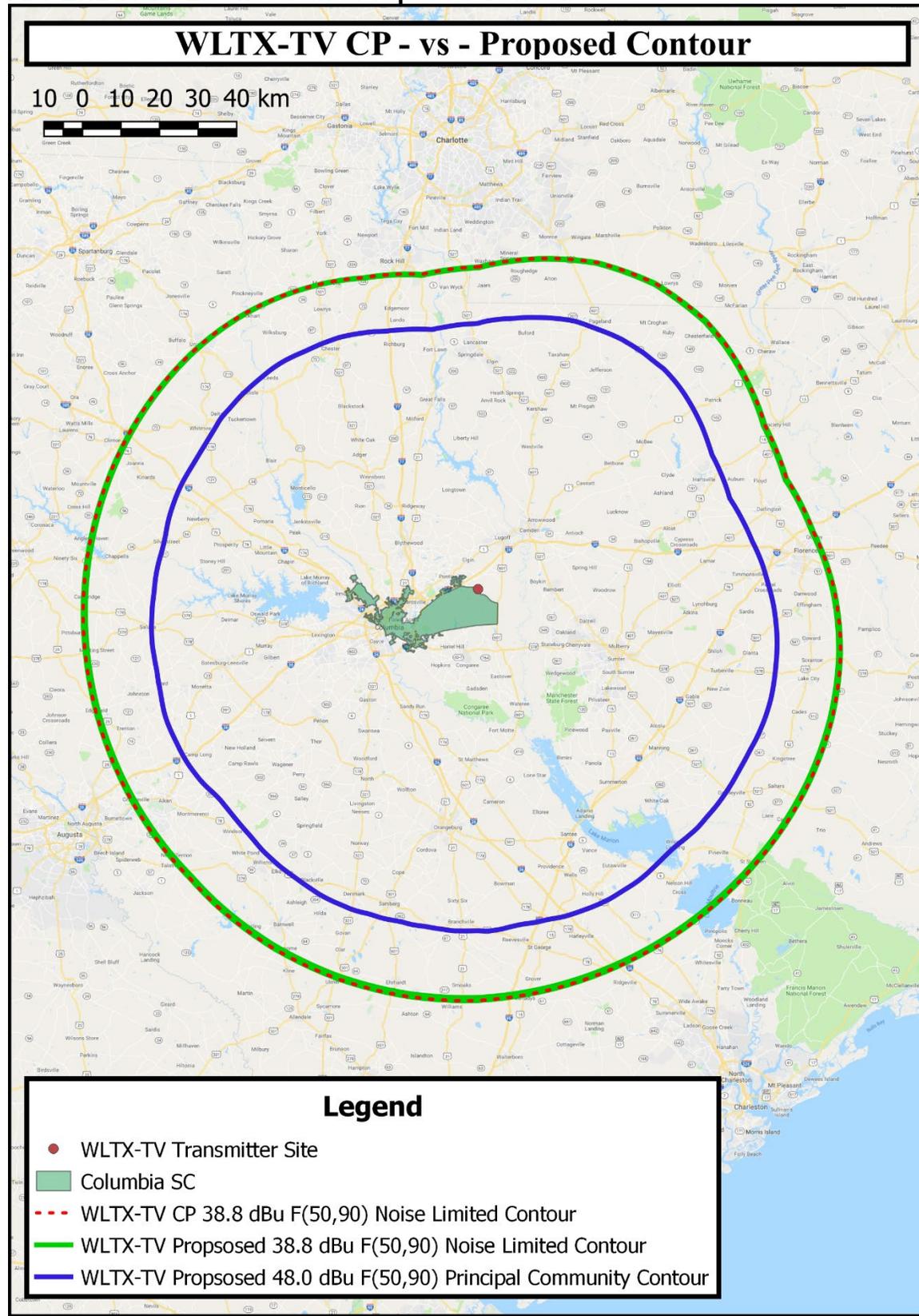
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Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal WLTX CP Modification ----

Proposal receives 5.59% interference from scenario 1  
No IX check failures found.

**APPENDIX C –Licensed and Proposed Contours**



### APPENDIX D – Far Field Exposure to RF Emissions

