



Kessler and Gehman Associates
Consultants • Broadcast • Wireless

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

CALL SIGN: KTMJ-CD
FACILITY ID: 43649
FCC FILE NO.: 0000034733
LOCATION: TOPEKA, KS

Prepared For:

Nexstar Broadcasting, Inc.
545 E. John Carpenter Freeway
Suite 700
Irving, TX 75062

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

May 13, 2019

TABLE OF CONTENTS

1.0 MINOR MODIFICATION APPLICATION..... 2

2.0 ALLOCATION ANALYSIS 2

3.0 REQUEST FOR WAVIER OF SERVICE AREA EXPANSION FREEZE 2

4.0 RADIO FREQUENCY RADIATION COMPLIANCE..... 4

5.0 CERTIFICATION..... 6

APPENDIX A – Tower Elevation Profile 7

APPENDIX B – TVStudy V2.2.5 Allocation Analysis 8

APPENDIX C – Licensed, CP, and Proposed Contour 10

APPENDIX D – Far Field Exposure to RF Emissions 11

1.0 MINOR MODIFICATION APPLICATION

Nexstar Broadcasting, Inc. is the licensee of a Class A television broadcast station having call sign KTMJ-CD¹ which is currently licensed² and construction permitted³ (“CP”) to operate at FCC ASRN 1032651 and 1032989 respectively. It is herein proposed to move the KTMJ-CD CP to a newly constructed tower⁴ site whose primary purpose is to host the KTKA⁵ post repack facility. The proposed relocation is 13.65km toward 237.1 degrees from true north relative to the CP facility and 13.92km toward 252.6 degrees from true north relative to the licensed facility. Pursuant to 47 CFR Section 73.3572(a)(s) the instant application is considered a “minor” change because:

- There is no change in frequency relative to the underlying Construction Permit
- There is no change in transmitting antenna location such that the protected contour resulting from the change does not overlap some portion of the protected contour of the authorized licensed facility as illustrated in Appendix C.

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 REQUEST FOR WAVIER OF SERVICE AREA EXPANSION FREEZE

On April 5, 2013, the Media Bureau issued a Public Notice (April 2013 Freeze Public Notice) imposing limitations on the filing and processing of certain applications by full power and Class A television stations in light of the then

¹ FCC Facility ID No.: 43649

² FCC File No.: BLDTA-20120315ADP

³ FCC File No.: 0000034733

⁴ ASRN 1031887 owned by Nexstar

⁵ FCC Facility ID No.: 49397

forthcoming broadcast incentive auction⁶. As of the filing date of the instant application, the Media Bureau will not accept for filing modification applications by Class A television broadcast licensees and permittees for changes to existing television service areas that would increase a Class A station's protected contour in one or more directions beyond the area resulting from the station's present parameters as represented in its authorizations (license and/or construction permit). The April 2013 Freeze Public Notice indicates that the Bureau will consider, on a case-by-case basis, requests for waiver of the filing limitation imposed by the Public Notice when a modification application is necessary or otherwise in the public interest for technical or other reasons to maintain quality service to the public, such as when zoning restrictions preclude tower construction at a particular site or when unforeseen events, such as extreme weather events or other extraordinary circumstances, require relocation to a new tower site.

Nexstar stations KTMJ-CD and KTKA were both involuntarily repacked in the FCC incentive auction. The post prepack KTKA facility requires a new tower structure and it is herein proposed to co-locate the KTMJ-CD facility to the new structure for a significant fiscal and logistical benefit to the Commission and tower crews respectively. The grant of the instant waiver and application shall at minimal eliminate the following significant repack reimbursable expenses currently required to procure the existing CP:

- Tower modification costs (\$409,500 cost catalog estimate)
- Tower rigging and installation costs (\$205,000 cost catalog estimate)
- Eliminate additional tower mod costs (Unknown since analysis, design and proposal would be required)

⁶ *Media Bureau Announces Limitations on the Filing and Processing of Full Power and Class A Television Station Modification Applications, Effective Immediately, and Reminds Stations of Spectrum Act Preservation Mandate*, Public Notice, 28 FCC Rcd 4364 (MB 2013)

Appendix C demonstrates the red herein proposed contour relative to the purple CP contour and green licensed contour. As illustrated the proposed contour encroaches beyond the CP contour at 131 through 355 degrees and is considered an expansion area, while radials 355 through 131 degrees coverage area is contracted or lost. A directional antenna was chosen to eliminate prohibited interference and to help reduce the expansion area. The coverage lost to the NE cannot be prevented since the main lobe of the antenna is pointed to the NE and 15kW ERP⁷ is being used. Due to the proposed site change, it is not possible to replicate the CP coverage area without some degree of expansion and contraction. For these reasons, it is respectfully requested to waive the expanded coverage restriction imposed in the April 2013 Freeze Public Notice. It is believed that consolidating KTMJ-CD at the new KTKA site will serve the best interest of the public by providing a significant savings to the Commission's reimbursement funds while minimally impacting the intent of the prevailing filing freeze.

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:

Terrain⁸ 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

⁷ Section 74.735(b)(2) peak ERP for Class A facilities is 15kW

⁸ Terrain extraction is based upon a 3 arc second point spacing terrain database.

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 0.07% 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

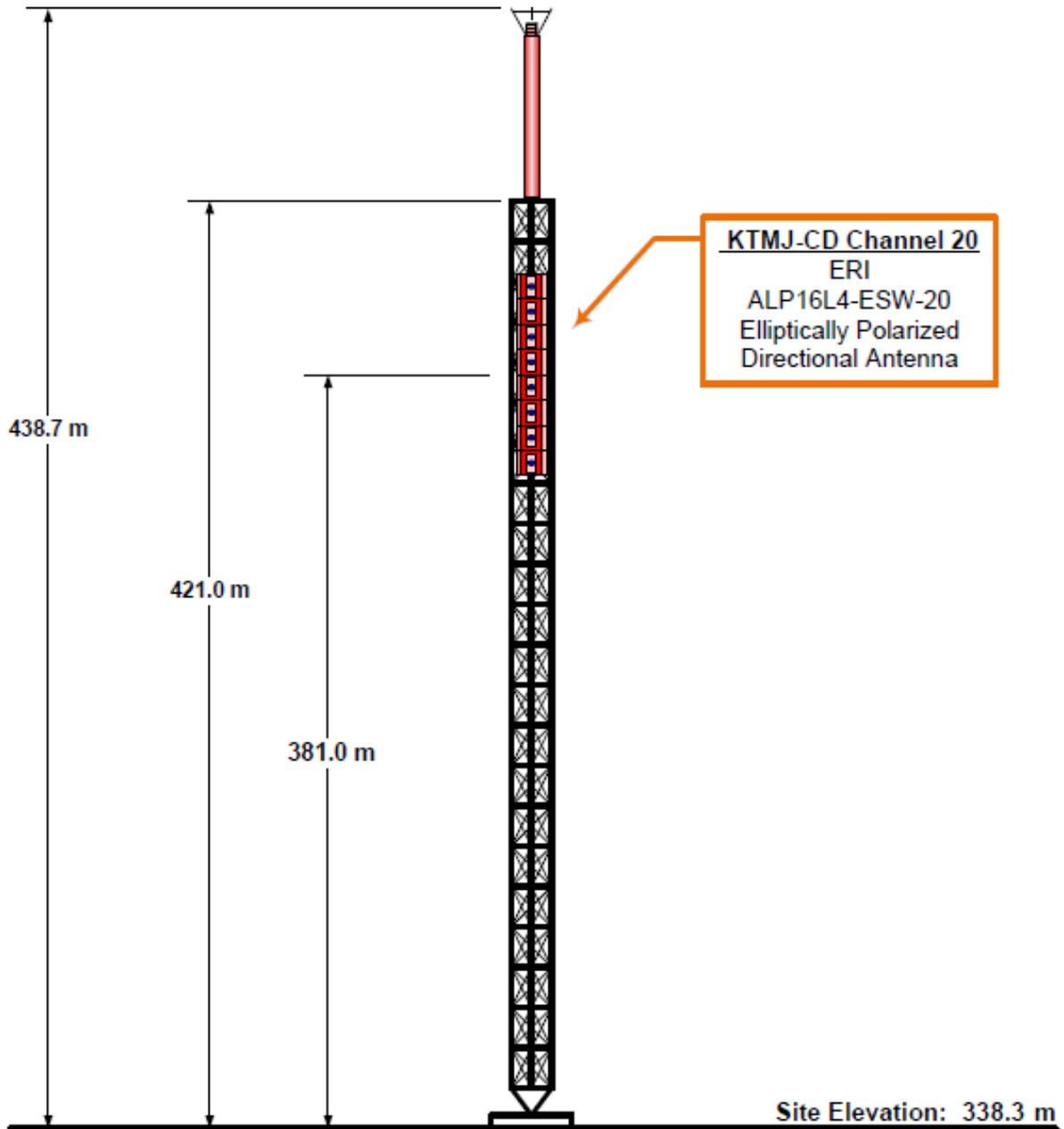
The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on May 13, 2019

Ryan Wilhour



Consulting Engineer

APPENDIX A – Tower Elevation Profile



Radiation Center AMSL:	719.3 m	ASR Coordinates (NAD 83):	
Radiation Center HAAT:	398.4 m	N. Latitude	39° 01' 34.0"
FCC ASR Number:	1031887	W. Longitude	95° 55' 02.0"

NOTE: NOT TO SCALE

KTMJ-CD – Minor Modification to a Construction Permitted Class A Broadcast Television Station

Topeka, KS

APPENDIX B – TVStudy V2.2.5 Allocation Analysis

Study created: 2019.05.10 10:55:47

Study build station data: LMS TV 2019-05-08

Proposal: KTMJ-CD D20 DC CP TOPEKA, KS
File number: KTMJ-CD at 1031887
Facility ID: 43649
Station data: User record
Record ID: 3747
Country: U.S.

Build options:
Protect LPTV records from Class A

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	KWCH-DT	D19	DT	LIC	HUTCHINSON, KS	BLCDT20090929ACC	193.1 km
No	KCKS-LD	D19	LD	CP	KANSAS CITY, KS	BLANK0000053333	84.9
Yes	K19KF-D	D19	LD	CP	PAXICO, KS	BNPDTL20100514AIB	23.2
No	KFLU-LD	D20	LD	LIC	FORT SMITH, AR	BLANK0000008907	354.4
No	K40LK-D	D20	LD	APP	FORT SMITH, AR	BLANK0000071939	418.5
No	K20LZ-D	D20	LD	CP	HAYS, KS	BNPDTL20100514AGY	300.1
Yes	K20LM-D	D20	LD	CP	MANHATTAN, KS	BNPDTL20100728ACH	61.6
Yes	K20KR-D	D20	LD	CP	TOPEKA, KS	BLANK0000013765	126.1
Yes	K20KR-D	D20	LD	LIC	TOPEKA, KS	BLANK0000013644	83.8
No	KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDT20110121ACA	333.2
No	KFKY-LD	D20	LD	LIC	JOPLIN, MO	BLANK0000007879	284.4
Yes	KUKC-LD	D20	LD	LIC	KANSAS CITY, MO	BLDTL20150205AAF	123.7
Yes	KETV	D20	DT	LIC	OMAHA, NE	BLCDT20041222AED	253.9
No	K20JD-D	D20	LD	LIC	CHEROKEE & ALVA, OK	BLDTT20101007ABH	340.2
No	KQCW-DT	D20	DT	APP	MUSKOGEE, OK	BLANK0000035925	334.7
No	KQCW-DT	D20	DT	LIC	MUSKOGEE, OK	BMLCDT20130823ACR	364.0
Yes	KKSU-LD	D21z	LD	LIC	MANHATTAN, KS	BLANK0000008588	59.9
No	KKSU-LD	N21z	TX	LIC	MANHATTAN, KS	BLTTL19950512ID	60.0
No	KAKE	D21	LD	LIC	WICHITA, KS	BLCDT20100308ABF	196.5
Yes	KTAJ-TV	D21	DT	LIC	ST. JOSEPH, MO	BLCDT20060703AAK	121.2
No	KWBE-LD	D21	LD	LIC	BEATRICE, NE	BLANK0000008496	155.9

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D20
Mask: Full Service
Latitude: 39 1 34.00 N (NAD83)
Longitude: 95 55 2.00 W
Height AMSL: 719.3 m
HAAT: 398.4 m
Peak ERP: 15.0 kW
Antenna: ERI ALP16L4-ESW-20 10.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

49.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	13.9 kW	422.7 m	63.4 km
45.0	14.8	434.0	64.3
90.0	14.8	408.1	63.0
135.0	14.2	379.0	61.2
180.0	8.37	375.1	58.1
225.0	1.32	373.9	48.0
270.0	1.23	377.7	47.7
315.0	7.21	416.3	59.2

Distance to Canadian border: 1060.7 km

Distance to Mexican border: 1144.4 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 315.4 degrees Distance: 300.3 km

KTMJ-CD – Minor Modification to a Construction Permitted Class A Broadcast Television Station

Topeka, KS

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 281.6 degrees Distance: 806.3 km

No land mobile station failures found

Study cell size: 1.00 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%

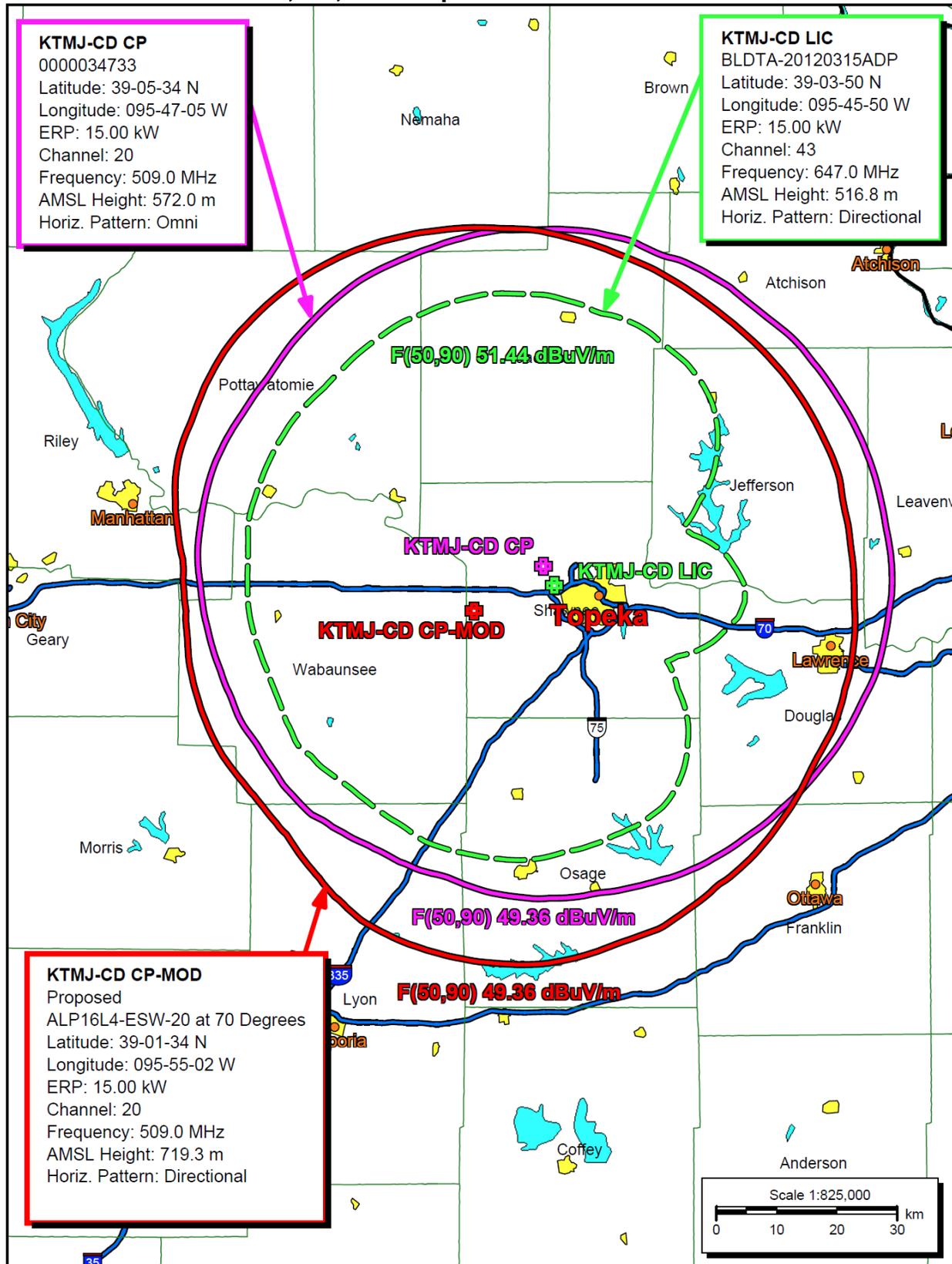
---- Below is IX received by proposal KTMJ-CD at 1031887 ----

Proposal receives 1.02% interference from scenario 1
No IX check failures found.

KTMJ-CD – Minor Modification to a Construction Permitted Class A Broadcast Television Station

Topeka, KS

APPENDIX C – Licensed, CP, and Proposed Contour



APPENDIX D – Far Field Exposure to RF Emissions

