

**ENGINEERING REPORT
MINOR CHANGE
CONSTRUCTION PERMIT
APPLICATION
Site Change**

for

WCBW-FM – East St. Louis, IL
CH209A (89.7 MHz)
BLED-20010827AAM
(Facility ID No. 83448)

October 2020

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MUNN-REESE
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Discussion of Report

This firm was retained to prepare the required engineering report in support of this Minor Change Construction Permit Application for WCBW-FM – East St. Louis, IL (Facility ID No. 83448). Presently WMCB-FM is licensed under BLED-20010827AAM with 0.25 kW ERP (H&V) at 195 meters AMSL. WCBW-FM operating parameters of 0.15 kW ERP (H&V) at 165.8 meters AMSL from a new site are requested. WCBW-FM will continue to serve the community of East St. Louis, IL.

The antenna will be mounted on a mast on a building rooftop. The rooftop is 76' AGL. The mast will be mounted on top of a penthouse which is 11' tall. The COR of the antenna will be 4' above the penthouse. The FCC TOWAIR program shows that tower registration is not required.

The proposed service contours have been calculated in accordance with the Rules, and the data obtained has been tabulated and plotted in this report. The plotted contours are found in **Exhibit 1.0** of this report. This exhibit shows the 60 dBu contour which serves the community of license. The applicant would like to note the use of the NED 03 SEC terrain database for all allocation, contour and HAAT calculations contained here-in.

The proposed site for the Class A operation meets all the contour protection requirements towards other stations in the allocation. A tabulation of the proposed protections to each of station is found in **Exhibit 2.0**.

Discussion of Report (continued)

RADIATION PROTECTION: The Commission requires an engineering study regarding compliance with the guidelines for human protection from radiofrequency radiation. This report section is in response to that provision of the Rules. The current Federal Communications Commission guidelines for RF radiation protection are set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01).

The FM Broadcast facility proposed in this application will not produce human exposure to radiofrequency radiation in excess of the applicable safety standards specified in §1.1310 of the Commission's rules. The antenna COR will be approximately 20' above any potential human exposure. The FCC FM Model program shows the potential exposure from RF electromagnetic fields produced by the Type 2 FM broadcast antenna will be less than 200 $\mu\text{W}/\text{cm}^2$. The roof top facility is properly marked with signs, and entry is restricted by means of fencing with locked doors and/or gates. Any other means as may be required to protect employees and the general public will be employed.

In the event work would be required in proximity to the antenna such that the person or persons working in the area would be potentially exposed to fields in excess of the guidelines set forth in OET Bulletin No. 65 (Edition 97-01), the transmitter power will be reduced or the station will cease operation during the critical period.

DISTANCES TO CONTOURS: The table below shows the distances to the 3.16 mV/m and 1.0 mV/m contours from the proposed facility using an ERP of 0.15 kW at an HAAT of 23.14 meters. These distances have been calculated based on the FCC F(50-50) curves.

N. Lat. = 383749.3 W. Lng. = 901105.4 HAAT and Distance to Contour, FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC						
Azi.	AV EL	HAAT	ERP kW	dBk	60-F5	70-F5
000	125.7	40.1	0.1500	-8.24	7.15	4.02
045	124.0	41.8	0.1500	-8.24	7.30	4.12
090	134.2	31.6	0.1500	-8.24	6.38	3.56
135	140.3	25.5	0.1500	-8.24	6.24	3.48
180	149.2	16.6	0.1500	-8.24	6.24	3.48
225	147.1	18.7	0.1500	-8.24	6.24	3.48
270	157.4	8.4	0.1500	-8.24	6.24	3.48
315	163.2	2.6	0.1500	-8.24	6.24	3.48
Ave El= 142.66 M HAAT= 23.14 M AMSL= 165.8						

WBCW-FM Present and Proposed at Witte Bldg. East St. Louis 60 dBu Community Coverage

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WBCW-FM
 BLED20010827AAM
 Latitude: 38-37-52.92 N
 Longitude: 090-12-09 W
 ERP: 0.25 kW
 Channel: 209
 Frequency: 89.7 MHz
 AMSL Height: 195.0 m
 Elevation: 149.0 m
 Horiz. Pattern: Directional
 Vert. Pattern: No
 Prop Model: None

WBCW-FM.Witte
 Proposed Operation
 Latitude: 38-37-49.12 N
 Longitude: 090-11-05 W
 ERP: 0.15 kW
 Channel: 209
 Frequency: 89.7 MHz
 AMSL Height: 165.8 m
 Elevation: 137.8 m
 Horiz. Pattern: Omni
 Vert. Pattern: No
 Prop Model: None

■ WBCW-FM (209)
■ WBCW-FM.Witte (209)

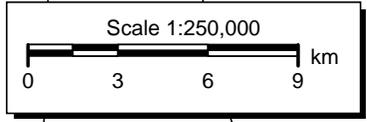
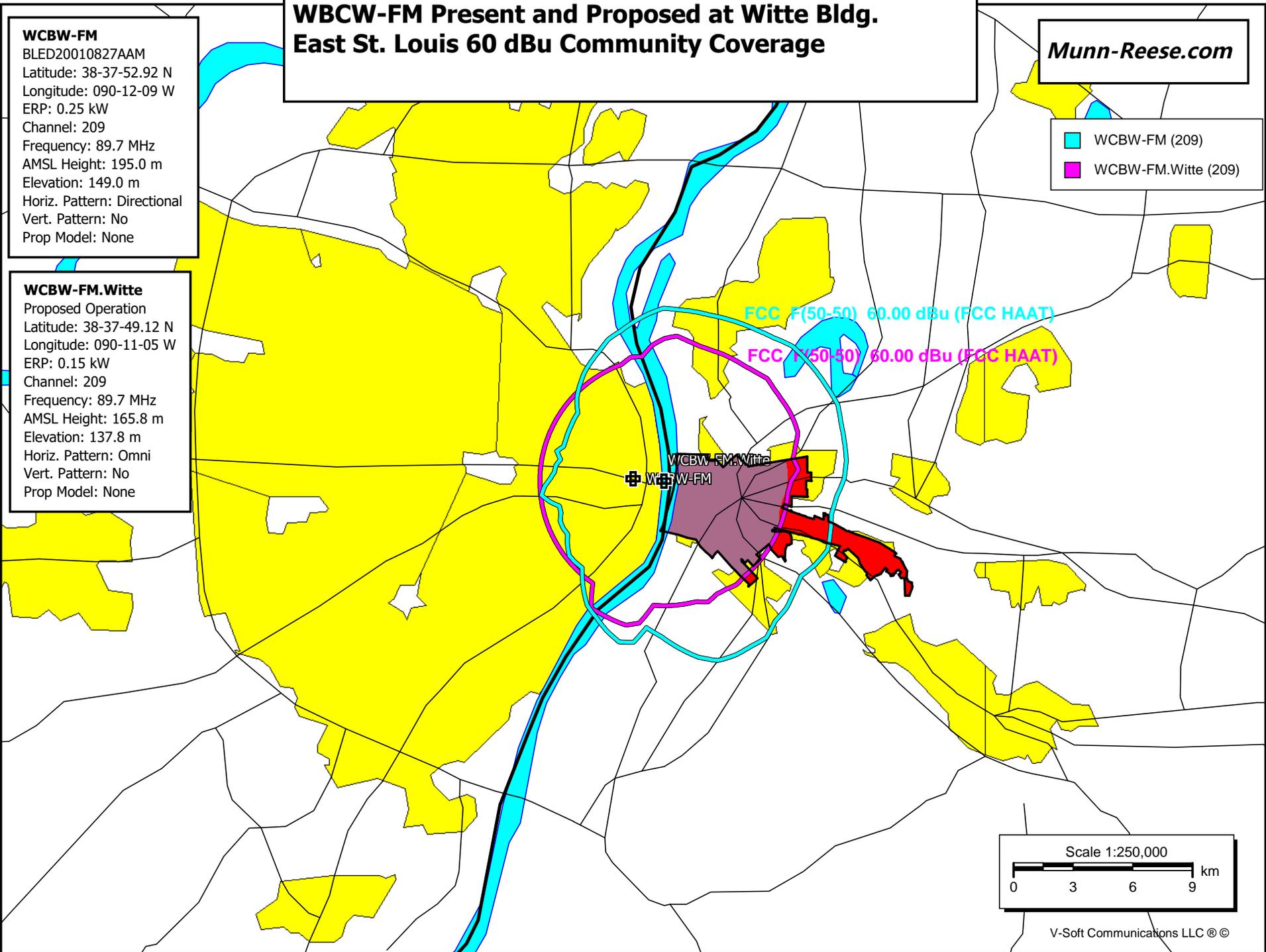


Exhibit 2.0

University Of Northwestern - St. Paul

REFERENCE
38 37 49.30 N.
90 11 05.40 W.

CH# 209A - 89.7 MHz, Pwr= 0.15 kw, HAAT= 23.4 M, COR= 165.8 M
Average Protected F(50-50)= 6.24 km
Omni-directional

DISPLAY DATES
DATA 10-13-20
SEARCH 10-21-20

CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY	STATE		<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)	
209A	WCBW-FM East St. Louis	LIC D__ IL	274.3 94.3	1.55 BLED20010827AAM	38 37 53.10 90 12 09.41	0.250 57	195	---Reference---	University Of Northwestern		
209A	KGXN Ballwin	LIC ___ MO	268.6 88.4	30.38 BLED19940429KT	38 37 23.11 90 32 01.40	0.120 52	220	6.7	0.1	2.3	Missouri River Christian B
211D	W211AD Granite City	LIC D__ IL	24.8 204.8	9.06 BLFT19920817TB	38 42 16.10 90 08 27.29	0.060 32	165	2.8	1.9	5.3	University Of Northwestern
210A	WLCA Godfrey	LIC D__ IL	358.4 178.4	35.40 BLED20050622AAA	38 56 57.20 90 11 47.41	1.500 120	276	16.7	2.8	7.3	Lewis & Clark Community Co
209B1	WBMV Mount Vernon	LIC ___ IL	104.3 285.1	113.81 BLED20050719AHR	38 22 15.20 88 55 20.21	10.500 150	303	38.2	4.4	54.7	University Of Northwestern
206C2	KCLC St. Charles	LIC D__ MO	302.0 121.8	33.04 BLED20100908AAC	38 47 13.70 90 30 28.29	50.000 73	218	27.8	24.0	4.4	Lindenwood University
212D	KWUR Clayton	LIC ___ MO	280.8 100.7	10.90 BLED20051108AHS	38 38 55.10 90 18 28.41	0.009 29	185	3.7	4.4	6.1	The Washington University
208A	KCFV Ferguson	LIC D__ MO	329.8 149.8	17.77 BLED19830314AR	38 46 07.10 90 17 16.40	0.100 49	201	2.5	7.6	4.7	St. Louis Community Colleg
262C3	KATZ-FM<< Bridgeton	LIC Z__ MO	289.7 109.6	18.19 BLH20101006AAB	38 41 07.20 90 22 54.39	17.000 120	169.8 283	84.6	11.5R	6.7M	Citicasters Licenses, Inc.
211D	KRHS Overland	LIC ___ MO	300.7 120.6	17.43 BLED20160906ADP	38 42 37.10 90 21 26.39	0.010 45	205	3.6	11.0	12.6	Ritenour School District
210A	KGNA-FM Arnold	LIC D__ MO	219.8 39.7	27.92 BLED20020805AAA	38 26 14.09 90 23 24.41	0.150 40	200	3.5	15.7	12.7	Missouri River Christian B
209A	KNLP Potosi	LIC ___ MO	213.3 32.9	93.09 BLED19980622KB	37 55 42.21 90 46 02.51	2.300 80	367	22.9	13.6	43.7	New Life Evangelistic Cent
207B	KTBJ Festus	LIC D__ MO	166.1 346.2	54.39 BLED20020723AAA	38 09 16.20 90 02 07.39	25.000 113	258	37.9	43.9	14.3	CSN International
208A	KNLH Cedar Hill	LIC D__ MO	226.7 46.5	43.57 BLED19981020KA	38 21 40.20 90 32 54.41	0.068 213	401	12.8	17.5	21.6	New Life Evangelistic Cent
209B1	WLUJ Springfield	LIC D__ IL	20.0 200.4	139.39 BLED20010828AAQ	39 48 30.20 89 37 30.41	20.000 100	106.6 270	35.3	25.8	80.6	Good News Radio, Inc.
212B	WMSH Sparta	CP D__ IL	160.3 340.5	79.84 0000112343	37 57 11.00 89 52 37.00	33.000 185	326	51.5	67.5	27.6	Covenant Network
211D	K211GB Gray Summit	LIC D__ MO	254.8 74.4	56.43 BLFT20170613AAO	38 29 44.10 90 48 33.41	0.050	313	0.4	8.2	49.8	Covenant Network
212B1	WMSH Sparta	LIC D__ IL	160.3 340.5	79.83 BLED20120322AFH	37 57 11.20 89 52 37.39	5.200 136	277	30.4	70.3	48.4	Covenant Network
208A	WGRN Greenville	LIC ___ IL	66.1 246.6	73.60 BLED19821122AJ	38 53 43.10 89 24 30.19	0.300 62	225	11.2	50.2	51.8	Greenville College Educati
210A	KGNV Washington	LIC ___ MO	267.6 87.1	80.20 BLED19901217KD	38 35 49.10 91 06 17.49	1.000 65	245	14.7	51.8	54.1	Missouri River Christian B
211A	WLLM-FM Carlinville	LIC ___ IL	22.2 202.5	86.34 BLED20010302AAX	39 20 58.20 89 48 16.30	5.000 90	286	27.4	76.7	58.1	Good News Radio, Inc.
210A	WSWS Smithboro	LIC D__ IL	69.3 250.0	100.12 BLED20110906AAF	38 56 35.20 89 06 13.21	2.000 110	266	19.6	63.9	67.8	The Power Foundation
206D	W206AN Carlinville	LIC ___ IL	15.3 195.5	74.17 BLFT20100218AAH	39 16 28.10 89 57 23.31	0.080 45	227	6.4	66.4	66.6	Family Worship Center Chur
210C3	KHIS Jackson	LIC ___ MO	171.0 351.1	140.71 BLED20100628AWX	37 22 40.20 89 56 05.39	12.500 142	317	36.6	78.2	94.9	Pure Word Communications
207B	WIPA Pittsfield	LIC D__ IL	340.6 160.3	128.83 BLED19921221KB	39 43 25.11 90 41 09.40	50.000 150	316	47.4	116.8	80.0	The Board Of Trustees Of T

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap)	*OUT* (in km)
263D Centralia	W263CT	LIC D__ IL		95.5 276.2	92.40 BLFT20170105AAC	38 32 45.10 89 07 47.19	0.075 33	169.8 183	84.6 Samuel	9.5R Stratemeyer	82.9M
212C3 Cuba	KGNN-FM	LIC ___ MO		238.7 58.0	115.26 BLED19981123KA	38 05 11.20 91 18 30.50	6.300 99	2.8 362	28.4 Missouri	106.0 River	84.5 Christian B
209A Rolla	KMNR	LIC ___ MO		242.2 61.2	157.48 BLED20141229AAA	37 57 35.60 91 46 18.31	1.850 114	66.3 407	20.3 The Curators	85.1 Of The Univer	116.1
06 -- Rolla	NEW<<	CP ___N MO		242.6 61.6	158.18 BNPDVL-20090825BJS	37 57 53.70 91 47 01.89	0.300	4.1 470	14.7	18.7R	139.4M
06 -- Columbia	K06PT-D<<	CP ___N MO		281.0 99.7	189.82 BNPDVL-20091020AAM	38 56 12.10 92 20 02.59	0.300	4.1 236	6.6	10.7R	179.2M

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM.
In & Out distances between contours are shown at closest points. Reference zone= - Zone 2, Co to 3rd adjacent.
All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
<< = Station meets FCC minimum distance spacing for its class.