

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

K224FM – GRUNDY CENTER, IOWA
BNPFT-20171214AAP
FACILITY ID: 201481
92.7 MHz / 230 W ERP DA

MTN BROADCASTING, INC.

NOVEMBER 2020

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **MTN Broadcasting, Inc.** ("MTN"), permittee of FM translator station K224FM at Grundy Center, Iowa, and are in support of their application for modification of construction permit.¹ This application seeks to change the transmit antenna make and model associated with the facility, directional pattern envelope, and maximum effective radiated power. No other changes to the technical parameters are proposed under this application. This application seeks to modify the current construction permit under FCC File No. BNPFT-20171214AAP.

The facility, as authorized, would operate on FM channel 224 with a maximum effective radiated power of 250 watts at a center of radiation of 412.2 meters above mean sea level, 80 meters above ground level, utilizing a directional antenna. The proposed facility would operate at the same center of radiation elevation, but with a maximum effective radiated power of 230 watts. The antenna proposed for use under this application is a Bext TFC2K-2D-HW model, which is a directional antenna with two sections spaced one-half wavelength apart.

K224FM would operate as an AM translator station for AM station KDAO at Marshalltown, Iowa.² Exhibits E-1 and E-2 are maps that provide a comparison between the proposed 60 dBu service contour and both the KDAO 2 mV/m daytime contour and a twenty-five mile radius centered on the KDAO transmitter site. As these two maps demonstrate, the proposed translator 60 dBu service contour is wholly contained within both of these constructs.

¹ The Facility ID for K224FM at Grundy Center, Iowa is 201481.

² The Facility ID for KDAO at Marshalltown, Iowa is 46754.

JEREMY RUCK & ASSOCIATES, INC.

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Canton, IL 61520

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K224FM complies with the provisions of Section 74.1204 of the Commission's Rules. Due to the channel of operation, Section 74.1205 is not applicable. Exhibit E-3 is a tabular interference study for the proposed facility. This study demonstrates that the contour overlap provisions of Section 74.1204 would be met to all relevant authorizations. This tabular interference study is graphically depicted in the contour map that is Exhibit E-4.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The translator antenna would utilize an existing structure that does not require registration with the Commission. The addition of the translator antenna to this existing structure would not increase the existing environmental impact already present from the monopole. Additionally, the adding the translator antenna to the structure will not require modifications to the structure or to the site.

The proposed facility would not constitute a radiofrequency radiation hazard to persons at the site. The Commission's online *FM Model* utility returns a calculated maximum power density of $0.266 \mu\text{W}/\text{cm}^2$ at a distance of 145 meters from the tower. This value complies with the uncontrolled environment of the Commission's safety standard. The Bext TFC2K-2D-HW model antenna is considered a "type-2" antenna, and was analyzed as such.

MTN certifies that it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

JEREMY RUCK & ASSOCIATES, INC.

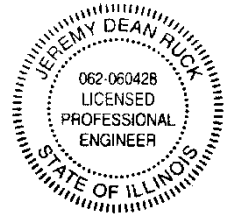
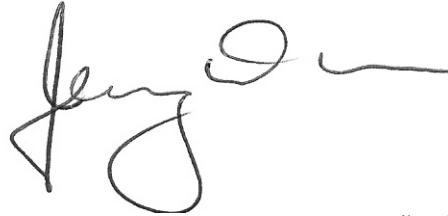
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11.12.2020

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The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2021

Jeremy D. Ruck, PE
November 12, 2020

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11.12.2020

K224FM.X

BNPFT20171214AAP
Latitude: 42-21-11.90 N
Longitude: 092-53-04.70 W
ERP: 0.23 kW
Channel: 224
Frequency: 92.7 MHz
AMSL Height: 412.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- Proposed K224FM 60 dBu Service Contour
- KDAO 2 mV/m Daytime Service Contour
- KDAO Twenty-Five Mile Site Radius

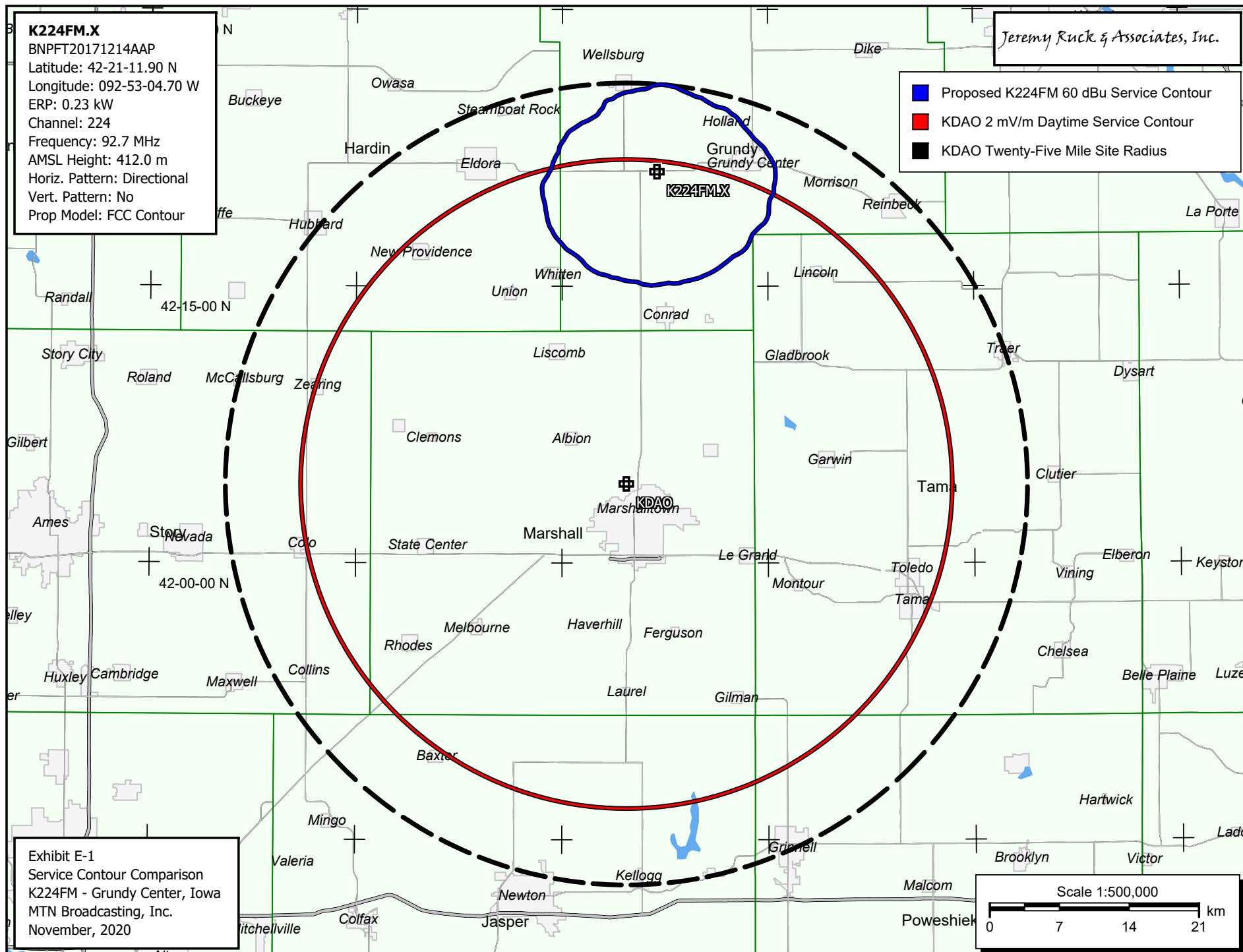


Exhibit E-1
Service Contour Comparison
K224FM - Grundy Center, Iowa
MTN Broadcasting, Inc.
November, 2020

Scale 1:500,000
0 7 14 21 km

K224FM.X

BNPFT20171214AAP

Latitude: 42-21-11.90 N

Longitude: 092-53-04.70 W

ERP: 0.23 kW

Channel: 224

Frequency: 92.7 MHz

AMSL Height: 412.0 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- Proposed K224FM 60 dBu Service Contour
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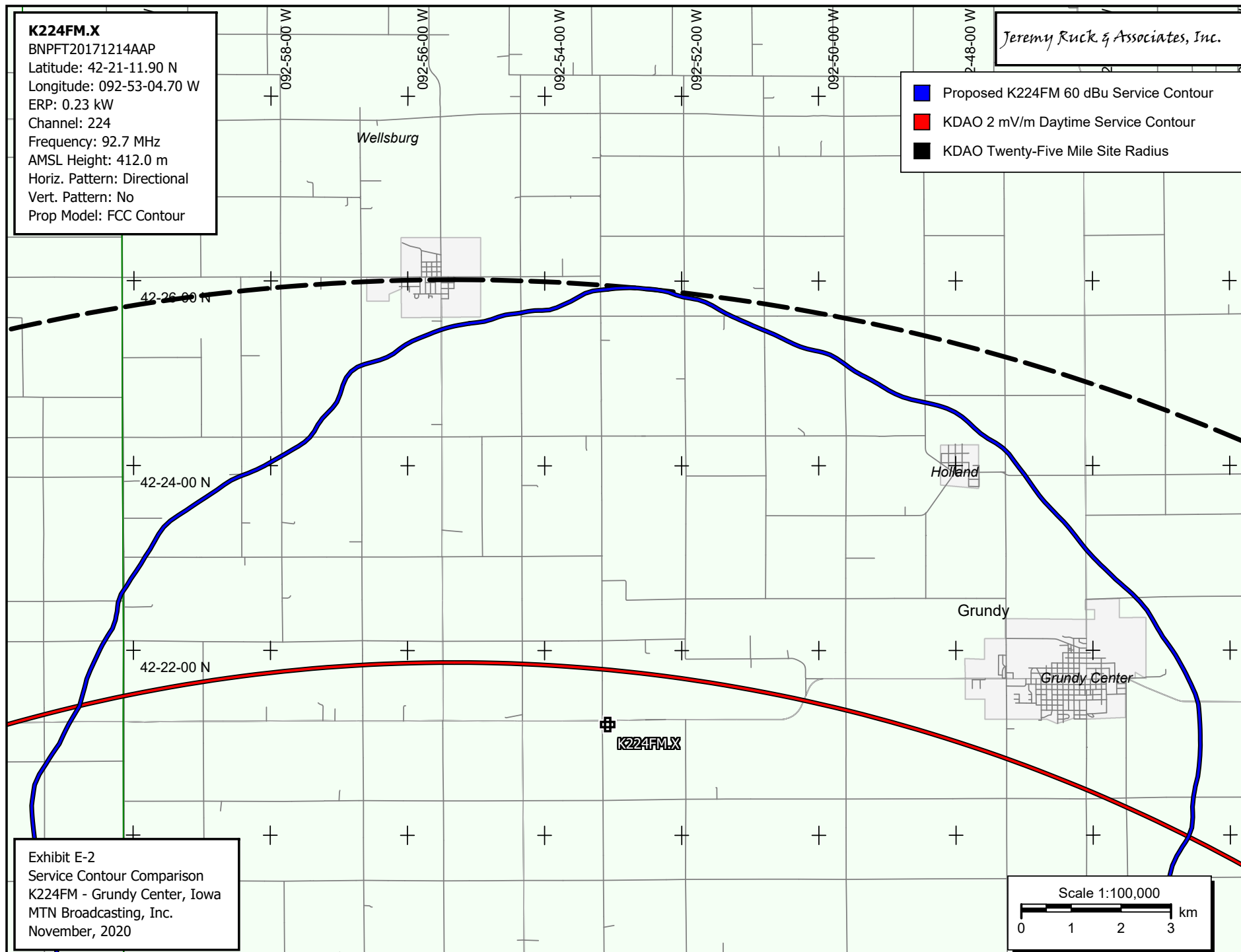


Exhibit E-2

Service Contour Comparison

K224FM - Grundy Center, Iowa

MTN Broadcasting, Inc.

November, 2020

Scale 1:100,000

0 1 2 3 km

Jeremy Ruck & Associates, Inc.
Consulting Engineers

Exhibit E-3 - Tabular Interference Study
K224FM - Grundy Center, Iowa
CH# 224D - 92.7 MHz, Pwr= 0.23 kW DA, HAAT= 0.0 M, COR= 412 M
Average Protected F(50-50)= 6.94 km
Standard Directional

REFERENCE
42 21 11.90 N.
92 53 04.70 W.

DISPLAY DATES
DATA 11-12-20
SEARCH 11-12-20

CH CITY	CALL	TYPE STATE	ANT --	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
224D Grundy Center	K224FM	CP D IA		0.0 91.3	0.00 BNPFT20171214AAP	42 21 11.90 92 53 04.70	0.250	412	---Reference---		
224C2 Ottumwa	KTWA	LIC N IA		166.7 347.0	151.68 BLH20000825AHB	41 01 29.00 92 28 09.70	50.000 97	131.1 331	45.3	8.9	66.2 O-Town Communications, Inc
223C2 West Des Moines	KJJY	LIC IA		223.6 43.0	105.13 BMLH20000525AAP	41 39 53.00 93 45 24.80	41.000 165	77.5 443	52.3	15.8	35.8 Radio License Holding Cbc,
222C0 Oelwein	KKHQ-FM	LIC IA		65.7 246.4	90.03 BLH20160217AAE	42 40 56.60 91 52 50.60	100.000 297	10.4 627	73.4	68.9	15.9 Townsquare Media Waterloo
227C1 Des Moines	KIOA	LIC IA		210.7 30.4	93.12 BLH20000207ABQ	41 37 55.00 93 27 26.80	82.000 325	9.9 596	71.9	71.4	20.2 Saga Communications Of Iow
225A Rockford	AU3729155	VAC N IA		355.1 175.0	75.73 RM9562	43 01 54.89 92 57 53.71	6.000 100	45.0 430	29.2	22.0	34.2 Mountain West Broadcasting
226D Waterloo	K226CK	LIC IA		76.0 256.4	43.09 BLFT20160718ABR	42 26 45.00 92 22 29.70	0.250	1.1 378	12.6	30.6	29.7 University Of Northwestern
224C3 Algona	KLGA-FM	LIC IA		306.9 126.0	133.80 BLH19951019KB	43 04 04.80 94 12 08.80	3.500 137	83.4 493	28.1	40.2	73.8 Riverfront Broadcasting Of
225D Webster City	K225BZ	LIC IA		280.0 99.3	75.95 BLFT20141030ABM	42 28 03.90 93 47 48.80	0.250	16.7 437	11.5	47.8	48.5 Fieldview Broadcasting, LL

Terrain database is FCC 30 meter , 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= west Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
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.

K224FM.X

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Latitude: 42-21-11.90 N

Longitude: 092-53-04.70 W

ERP: 0.23 kW

Channel: 224

Frequency: 92.7 MHz

AMSL Height: 412.0 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- 60 dBu F(50,50) Service Contour
- 40 dBu F(50,10) Interference Contour
- 54 dBu F(50,10) Interference Contour
- 100 dBu F(50,10) Interference Contour

