

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

KQLZ - NEW ENGLAND, NORTH DAKOTA
BPH-20160513AEQ
CHANNEL 239C2 / 103.9 MHz

DICKINSON-BELFIELD BROADCASTING CORPORATION

JULY 2018

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Dickinson-Belfield Broadcasting Corporation** ("Dickinson"), licensee of FM broadcast station KQLZ at New England, North Dakota, and are in support of their application for modification of construction permit.¹ This application seeks to modify the current construction permit for the facility, which is under FCC File No. BPH-20160513AEQ.

The current construction permit for KQLZ authorizes operation on FM channel 239C1 with a maximum effective radiated power of 100 kilowatts at a center of radiation of 219 meters above average terrain, 1034 meters above mean sea level, utilizing a non-directional antenna. The proposed facility would utilize the same site location, but at a lower elevation. It is proposed that the construction permit be modified to specify operation on FM channel 239C2 with a maximum effective radiated power of 27.3 kilowatts at a center of radiation of 175 meters above average terrain, 987 meters above average terrain, also utilizing a non-directional antenna.²

Average terrain utilized in this application is based on samples of the Commission's 30-meter terrain database. Although the use of the Commission's 30-second terrain database is considered standard, the 30-meter terrain database is a more accurate set. The center of radiation above average terrain was determined through a 360 radial sample of this database.

¹ The Facility ID for KQLZ at New England, North Dakota is 164305.

² The form pages specify a maximum effective radiated power of 27.5 kW, which is the rounded value determined through the application of Section 73.212.

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As indicated, the proposed facility would operate as a class C2 facility on channel 239. The current site would be utilized as the reference coordinates for the modified allocation. Reference parameters for the facility would provide the requisite service level over the community of license. Channel 239 is allocated to New England, North Dakota. The proposed facility therefore complies with the provisions of Section 73.203 of the Commission's Rules.

The proposed facility complies with the community coverage requirements of Section 73.315 of the Commission's Rules. Exhibit E-1 illustrates the predicted 70 dBu and 60 dBu service contours for the proposed facility. This map demonstrates that the community of New England, North Dakota is fully encompassed by the predicted 70 dBu service contour. Additionally, there are no major terrain obstructions between the transmitter site and the community of license.

The proposed facility will comply with the provisions of Section 73.1125 of the Commission's Rules. A toll-free telephone number will be made available to residents of the community of license to contact the main studio.

The proposed facility complies with the spacing provisions of Section 73.207 of the Commission's Rules. Sections 73.215 and 73.215 are not applicable. Exhibit E-2 is a single channel spacing study for the proposed facility. This study demonstrates that the spacing provisions under Section 73.207 would be met to all proposed and authorized facilities.³

³ The single channel spacing study in Exhibit E-2 does not indicate any other facilities. The lack of other facilities illustrated on this study is because no other facilities of interest are located within the search radius.

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The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed facility would utilize an existing tower that is registered with the Commission. The addition of the proposed antenna to the registered tower would not increase the existing environmental impact already present from the tower. Additionally, the proposed facility would not constitute an RF radiation exposure hazard at the site.

In addition to the proposed facility, the tower also supports the transmitting antenna for FM station KXDI at Belfield, North Dakota.⁴ This facility is authorized with a maximum effective radiated power of 100 kW at a center of radiation of 176 meters above ground level. The antenna utilized by KXDI is a type-3 antenna with eight sections spaced one wavelength apart. *FM Model* calculates a power density of $12.9 \mu\text{W}/\text{cm}^2$ at a distance of 47 meters from the tower base. The proposed facility, analyzed as a type-1 antenna, has a predicted power density of $133.9 \mu\text{W}/\text{cm}^2$ at a distance of 16 meters from the tower.⁵ If the assumption is made that the maximum power density from each antenna occurs at all locations in the vicinity of the tower, the calculated power density is $146.8 \mu\text{W}/\text{cm}^2$. This value complies with the maximum limit permissible under the uncontrolled environment condition of the Commission's safety standard.

The proposed facility complies with the multiple ownership provisions of Section 73.3555 of the Commission's Rules. The proposed KQLZ facility would be co-located with KXDI at Belfield, North Dakota. That facility operates as a class C1 facility, thus the proposed 70 dBu contour of

⁴ The Facility ID for KXDI at Belfield, North Dakota is 189497.

⁵ Analysis assumes four bays spaced one wavelength apart.

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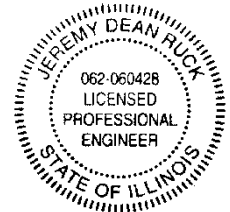
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KQLZ would be wholly contained within the 70 dBu service contour of KXDI. The 70 dBu service contour of KQLZ, therefore, defines the contour based market for the two common facilities.⁶

Since the contour market defined by the common facilities is defined by the overlap between two facilities in the same service, it is necessary and sufficient to demonstrate that the proponent would not control greater than fifty percent of the stations serving the market. Exhibit E-3 illustrates the contour market, and demonstrates that there are at least four additional facilities serving the market with site locations less than 92 kilometers from the market perimeter. The facilities considered in this analysis are summarized in the following table.

Callsign	Community of License	Facility ID	Contour Color
KQLZ	New England, North Dakota	164305	Blue
KXDI	Belfield, North Dakota	189497	Green
KCAD	Dickinson, North Dakota	57740	Red
KDXN	South Heart, North Dakota	169897	Magenta
KZRX	Dickinson, North Dakota	57741	Black
KZZQ	Richardton, North Dakota	189545	Yellow

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, 2019

Jeremy D. Ruck, PE
July 12, 2018

⁶ Neither common facility is considered home to a rated market.

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7.12.2018

KQLZ.X

BPH20160513AEQ
Latitude: 46-43-31 N
Longitude: 102-55-00.40 W
ERP: 27.30 kW
Channel: 239
Frequency: 95.7 MHz
AMSL Height: 986.9 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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- Predicted 70 dBu Service Contour
- Predicted 60 dBu Service Contour

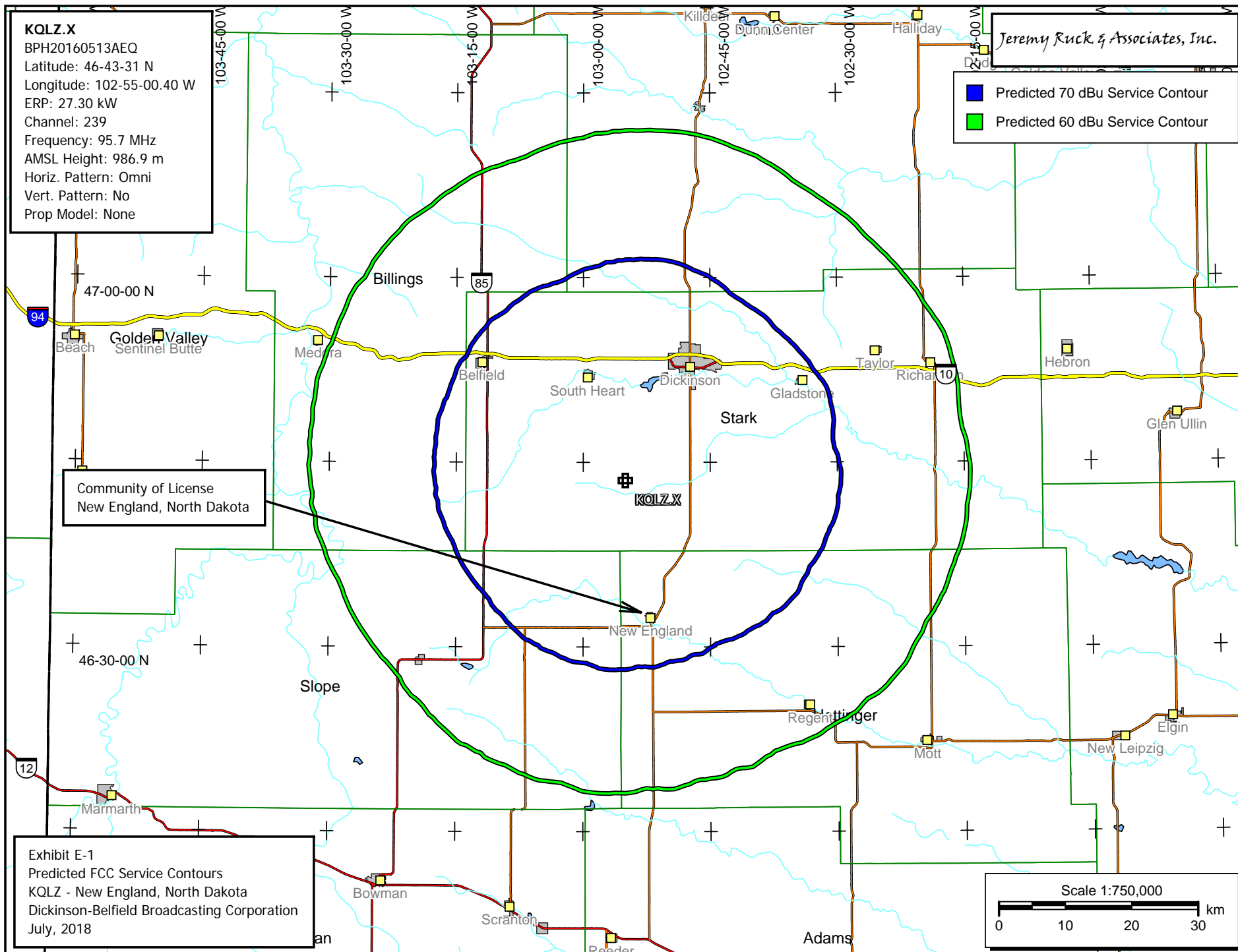
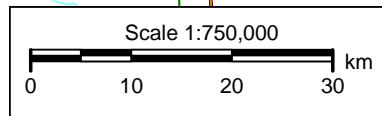


Exhibit E-1
Predicted FCC Service Contours
KQLZ - New England, North Dakota
Dickinson-Belfield Broadcasting Corporation
July, 2018



Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois
Exhibit E-2 - Single Channel Spacing Study
KQLZ - New England, North Dakota

REFERENCE		DISPLAY DATES
46 43 31.0 N.	CLASS = C2 Int = B	DATA 07-11-18
102 55 00.0 W.	Current Spacings to 3rd Adj.	SEARCH 07-11-18
----- Channel 239 - 95.7 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KQLZ	CP	239C1 New England	ND 0.0	0.00	223.5	-223.5
KQLZ	LIC	239A New England	ND 189.4	29.51	165.5	-136.0

Reference station has protected zone issue: Canada
All separation margins include rounding

KQLZ.X

BPH20160513AEQ

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Longitude: 102-55-00.40 W

ERP: 27.30 kW

Channel: 239

Frequency: 95.7 MHz

AMSL Height: 986.9 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

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- KQLZ 70 dBu Service Contour
- KXDI 70 dBu Service Contour
- KCAD 70 dBu Service Contour
- KDXN 70 dBu Service Contour
- KZRX 70 dBu Service Contour
- KZZQ 70 dBu Service Contour
- Contour Market

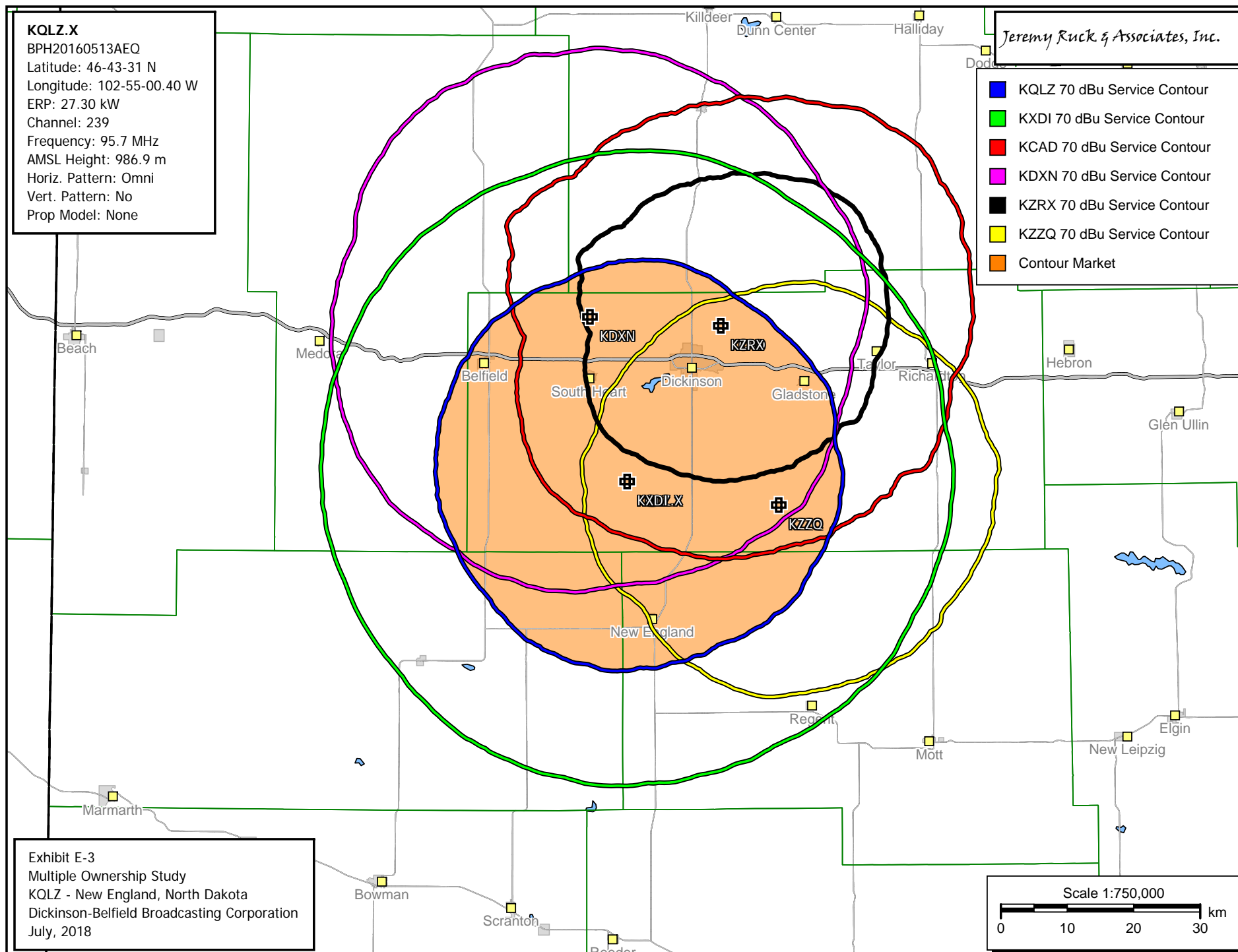


Exhibit E-3
Multiple Ownership Study
KQLZ - New England, North Dakota
Dickinson-Belfield Broadcasting Corporation
July, 2018

Scale 1:750,000
0 10 20 30 km