

Technical Report Supporting a Form 349 Minor Change In Licensed Facility Construction Permit Application

Pursuant to 47 C.F.R. Section 74:

for

*K212GG.L - Grand Island, NE
(Facility ID: 78646)*

"Correction of Non-Directional Antenna"

as a

*Regular, Non-Commercial,
Non-Fill-In Translator for
WYFQ-FM - Wadesboro, NC*

Table of Contents

Table of Contents

Explanation of Technical Report

Exhibit 1 - Service Contour Study: Present vs Proposed Operations

Exhibit 2 - Service Contour Study: Proposed vs Primary Operations

Exhibit 3(a) - Copy of USGS Topographic Mapping of Existing Site

Exhibit 3(b) - Copy of USGS Aerial Photography of Existing Site

Exhibit 4 - Vertical Plan of Antenna System

Exhibit 5 - HAAT Calculation & Miscellaneous Coordinate Information

Exhibit 6 - Tabulation of Proposed Allocation

Exhibit 7(a-b) - Contour Protection Studies Toward Select Allocation Concern(s)

Exhibit 8(a-b) - §74.1204(d) Second / Third Adjacent Given Interference Waiver Request

Exhibit 9 - Manufacturer's Vertical Radiation Pattern Documentation

Supplemental Appendix(s):

RF Appendix 1 - Radio Frequency Radiation Compliance Showing

EXPLANATION OF PROPOSAL: This Form 349 Filing and accompanying technical report supports a Minor Change Construction Permit Application for licensed FM Translator K212GG.L - Grand Island, NE (Facility ID: 78646). This FCC Form 349 Filing requests a correction to the non-directional antenna make and model and a correction to the antenna COR height. No change in the site location is required. Continued operation on the current frequency is requested. Continued operation on CH212D (90.3 MHz) with 0.250 kW ERP (Circular Polarization) at 624 meters AMSL is requested. At this time, the correct SWR FMEC/2 (fully spaced) non-directional antenna is being notified for the previously incorrect Shively 6812B-3 (fully spaced) antenna. This error was discovered during routine maintenance of the Translator. This Form 349 Filing will continue to specify rebroadcast of Class C3 FM Primary Station WYFQ-FM - Wadesboro, NC (CH228C3, 93.5 MHz); Facility ID No. 73965. The Translator will continue to provide service to the community of Grand Island, NE.

FACILITY COMPLIANCE SHOWINGS: A map of the proposed 60 dB μ service contour in relation to the present 60 dB μ service contour has been included in ***Exhibit 1***. The minor change proposed service area will overlap a portion of the presently licensed service area as noted in the exhibit. The proposed 60 dB μ contour of the Translator lies wholly outside of the NCE-FM Primary Station 60 dB μ contour. The Primary Station service contour relationship has been plotted in ***Exhibit 2***.

The proposed facility will be located on an existing 54.9 meter tower which does not require Antenna Structure Registration. In support of this filing, a copy of USGS Topographic Mapping and Aerial Photography of the existing tower site has been included in ***Exhibit(s) 3(a)*** and ***3(b)***. A depiction of the tower and antenna configuration has been included in ***Exhibit 4***. Further notification to the FAA or ASR governing authorities is not required as this proposal will not increase the overall tower height.

The applicant would like to note use of the NED 03 second terrain database for all allocation, contour and HAAT showings contained herein. A copy of the proposed HAAT calculation has been included in ***Exhibit 5***. In this instance, the non-directional antenna results in all individual radials and individual radial powers (MERP's) falling within the allowances of C.F.R. Section 74.1235(b) as noted in ***Exhibit 5***.

ALLOCATION COMPLIANCE SHOWINGS: The proposed Translator remains in compliance with C.F.R. Section 74.1204 toward all allocation protection concerns with the exception of KCVG(FM) - Hastings, NE (CH210C3); KNFA(FM) - Grand Island, NE (CH214A); and K209CX - Grand Island, NE (CH209D). A general allocation study for this proposal is found in **Exhibit 6**.

The applicant would like to note the existence of a C.F.R. 47 Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Request toward KCVG(FM) - Hastings, NE (CH210C3); KNFA(FM) - Grand Island, NE (CH214A); and K209CX - Grand Island, NE (CH209D) as included in **Exhibit(s) 8(a-b)**. In this instance, the affected station's signal strength at the Translator site has been identified as the 77.1 dBμ F(50:50) service contour, associated with a Translator interference contour adjusted by +40 dBμ per C.F.R. 47 Section 74.1204(a). Concerning distances between 50 meters of the Translator site to the extent of the interference contour, protection has been demonstrated through a downward radiation study as included in **Exhibit 8a**. Full protection will be afforded all concerns as this portion of the interference area will not reach the ground nor a seven meter artificial plane representing a standard two story house when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern data has been included in **Exhibit 9**. Concerning distances within 50 meters of the Translator site, protection has been demonstrated through aerial photography of the area as included in **Exhibit 8b**. Full protection will be afforded all concerns as this portion of the interference area is void of all housing, buildings or major roads representing locations where people live, work or travel on a regular basis. The applicant would like to note the existence of the dedicated transmitter building within this affected radius, however, buildings of this nature have been routinely exempt as a matter of FCC Policy (see similar grant under BPFT-20160129ALR).


There are two additional facilities, existing or proposed, close enough to merit further study. Therefore, a supplemental contour protection study has been provided toward each facility as included in **Exhibit(s) 7(a-b)**. It is believed sufficient clearance exists, precluding the need for additional contour protection showings.

Regarding protection of international concerns, the facility is, and will remain, more than 320 km from the common border between the United States and Canada or Mexico. As a result, no further international protection showings are believed required.

ENVIRONMENTAL COMPLIANCE SHOWINGS: The proposed facility complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments as set forth under §1.1310 and/or §1.1307(b)(3) of the Commission's rules and the guidelines for RF radiation protection guidelines as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01). Compliance has been demonstrated in the attached **RF Appendix 1** of this filing. The facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. In addition, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

Regarding compliance with the NEPA, Nationwide Programmatic Agreement and NHPA Section 106 for tower co-location, compliance with the Agreement is not required where no new tower construction is being proposed and the tower is not being substantially altered. Specifically, compliance is not necessary where only a correction is being requested with no physical change to the existing structure, as here. However, should the Commission determine compliance is necessary, upon notification to the applicant, the applicant will file FCC Form 621.

CERTIFICATION OF TECHNICAL CONSULTANT: *I declare, under penalty of perjury, that the contents of this report are true and accurate to the best of my knowledge and belief. I further certify I have over seventeen years of experience as a broadcast technical consultant before the Federal Communications Commission ("the FCC"); and am familiar with the Code of Federal Regulations Title 47 ("the Rules") as pertaining to this report and its contents herein. The underlying data utilized in this report was taken directly from FCC databases or indirectly through third party software vendors securing data directly from FCC databases. This firm cannot be held liable for errors or omissions resulting from the underlying data. The information contained herein is believed accurate to the date reported below.*

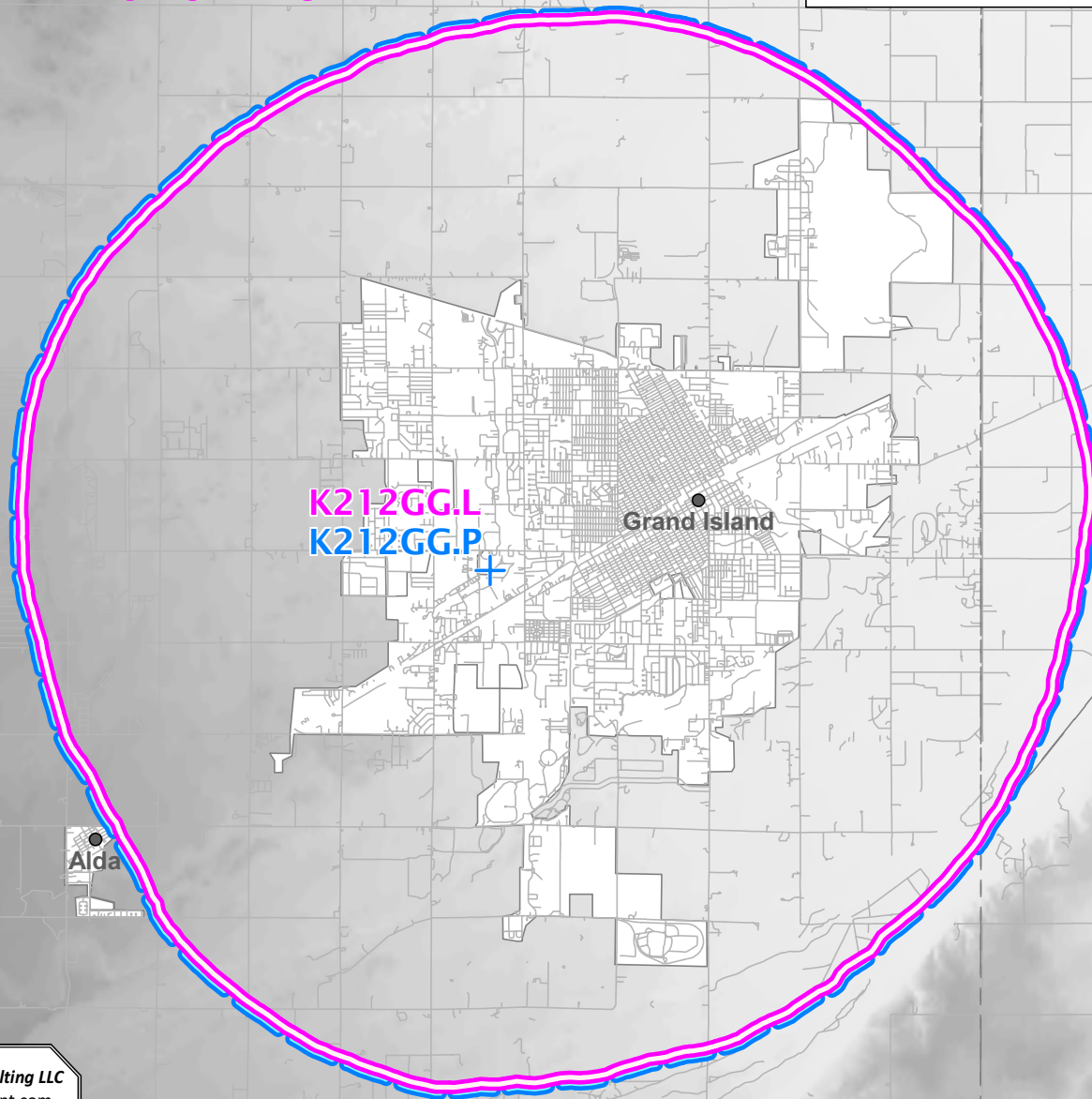


Justin W. Asher, Technical Consultant
March 20, 2017

Exhibit 1

Service Contour Study: Present vs Proposed Operations

Proposed 60 dBμ F(50:50) Contour
Present 60 dBμ F(50:50) Contour



K212GG.L
Grand Island, NE
BLFT20130815ACO
Facility ID: 78646
Latitude: 40-54-50 N
Longitude: 098-23-07 W
ERP: 0.25 kW
Channel: 212D (90.3 MHz)
AMSL Height: 623.0 m
Horiz. Pattern: Omni

60 dBμ F(50:50) Contour
Total Population: 52,164
Coverage Area: 273.7 sq. km

K212GG.P
Grand Island, NE
Proposed Operation
Facility ID: 78646
Latitude: 40-54-50 N
Longitude: 098-23-07 W
ERP: 0.25 kW
Channel: 212D (90.3 MHz)
AMSL Height: 624.0 m
Horiz. Pattern: Omni

60 dBμ F(50:50) Contour
Total Population: 52,180
Coverage Area: 279.3 sq. km

Terrain
528 605 m

Scale 1:125,000
0 2 4 6 km

NED 03 SEC Terrain Database
US Census 2010 PL Database

Exhibit 2

Service Contour Study: Proposed vs Primary Operations

Proposed 60 dBμ F(50:50) Contour

K212GG.P

K212GG.P
Grand Island, NE
Proposed Operation
Facility ID: 78646
Latitude: 40-54-50 N
Longitude: 098-23-07 W
ERP: 0.25 kW
Channel: 212D (90.3 MHz)
AMSL Height: 624.0 m
Horiz. Pattern: Omni

WYFQ-FM
Wadesboro, NC
BLED19951010KE
Facility ID: 73965
Latitude: 35-02-57 N
Longitude: 080-18-38 W
ERP: 8.70 kW
Channel: 228C3 (93.5 MHz)
AMSL Height: 310.0 m
Horiz. Pattern: Omni

Primary 60 dBμ F(50:50) Contour

WYFQ-FM

Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986

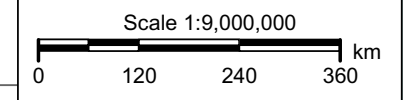


Exhibit 3a - Topographic Map of Existing Site

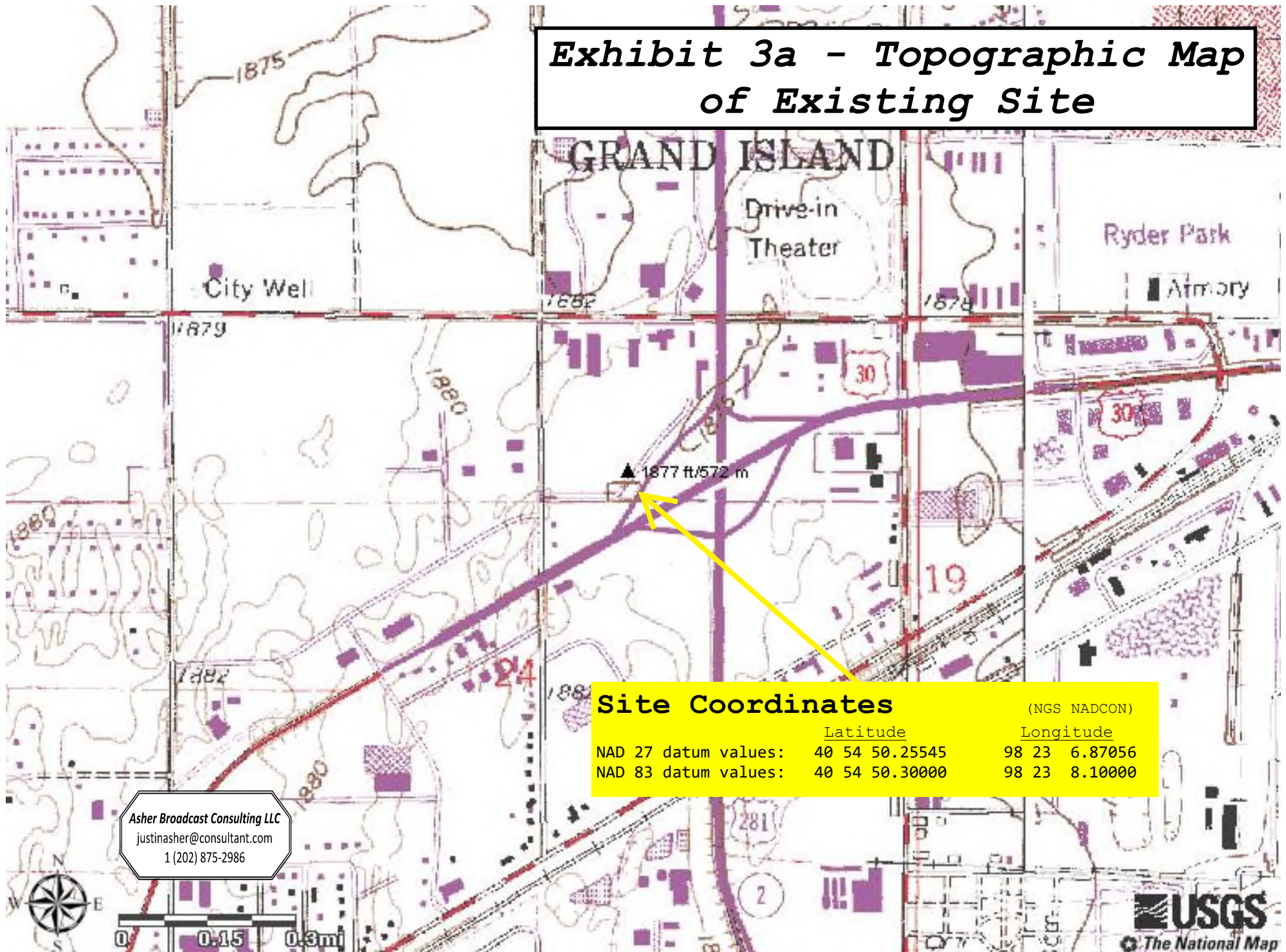


Exhibit 3b - Topographic Aerial Photograph of Existing Site

▲ 1877 ft/572 m

Site Coordinates

(NGS NADCON)

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum values:	40 54 50.25545	98 23 6.87056
NAD 83 datum values:	40 54 50.30000	98 23 8.10000

Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986



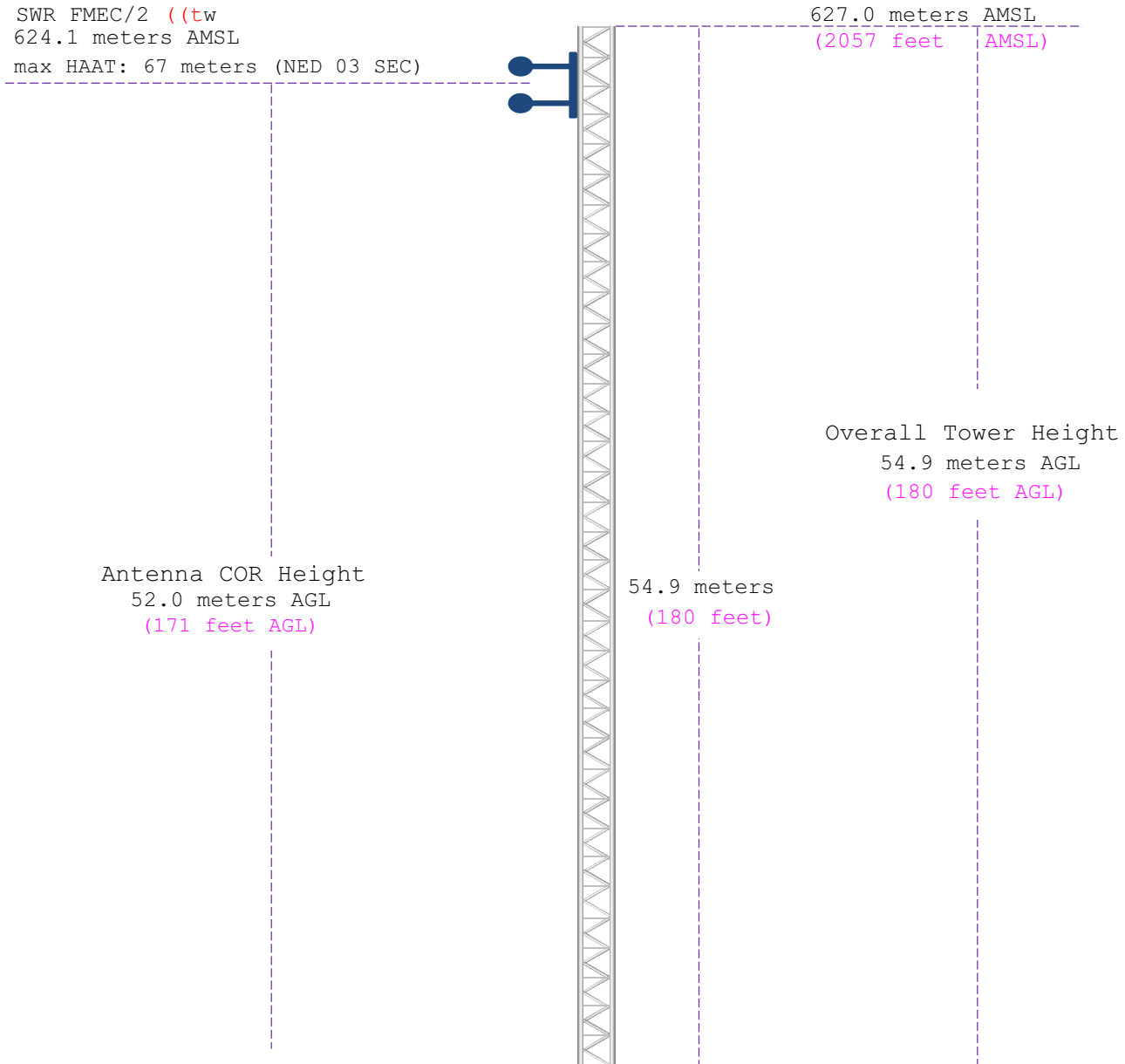
0 200 400ft

USGS
The National Map

Exhibit 4

Vertical Plan of Antenna System

K212GG.P - Grand Island, NE Antenna
 SWR FMEC/2 ((tw
 624.1 meters AMSL
 max HAAT: 67 meters (NED 03 SEC)



Ground Elevation: 572.1 meters AMSL (1877 feet AMSL)		
Address: 0.3 km northeast of the intersection of Claude Road and Interstate 30		
City: Grand Island	Latitude (D M S)	
County: Hall	Longitude (D M S)	
State: Nebraska	NAD 27 datum values:	40 54 50.25545 98 23 6.87056
	NAD 83 datum values:	40 54 50.30000 98 23 8.10000
Antenna Structure Registration	Drawing	Asher Broadcast Consulting, LLC
Not Required	Is Not	justinasher@consultant.com
	To Scale	1(202)875-2986

Exhibit 5

HAAT and Miscellaneous Coordinate Information

HAAT Calculation (1927):

N. Lat. = 405450.0 W. Lng. = 982307.0
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	569.9	54.1	0.2500	-6.02	1.000	9.67
030	561.0	63.0	0.2500	-6.02	1.000	10.39
060	556.8	67.2	0.2500	-6.02	1.000	10.70
090	559.8	64.2	0.2500	-6.02	1.000	10.48
120	567.4	56.6	0.2500	-6.02	1.000	9.90
150	572.5	51.5	0.2500	-6.02	1.000	9.42
180	575.0	49.0	0.2500	-6.02	1.000	9.16
210	578.2	45.8	0.2500	-6.02	1.000	8.82
240	585.0	39.0	0.2500	-6.02	1.000	8.05
270	582.4	41.6	0.2500	-6.02	1.000	8.35
300	578.5	45.5	0.2500	-6.02	1.000	8.79
330	576.2	47.8	0.2500	-6.02	1.000	9.04

Ave El= 571.89 M HAAT= 52.11 M AMSL= 624 M

NAD 1983 to NAD 1927 Conversion:

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum values:	40 54 50.25545	98 23 6.87056
NAD 83 datum values:	40 54 50.30000	98 23 8.10000

Various Coordinate Conversion Calculations (NAD 1983):

Position Type	Lat Lon
Degrees Lat Long	40.9139722°, -098.3855833°
Degrees Minutes	40°54.83833', -098°23.13500'
Degrees Minutes Seconds	40°54'50.3000", -098°23'08.1000"
UTM	14T 551740mE 4529388mN
UTM centimeter	14T 551740.65mE 4529388.92mN
MGRS	14TNL5174029388
Grid North	0.4°
GARS	164LX15
Maidenhead	EN00TV39RI54
GEOREF	FJGL36865483

Exhibit 6

Tabulation of Proposed Allocation

Blue Text indicates contour protection studies toward select allocation concern(s) as included in **Exhibit(s) 7(a-b)**.

Yellow highlighted text denotes the existence of a C.F.R. 47 Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Request toward KCVG(FM) - Hastings, NE (CH210C3); KNFA(FM) - Grand Island, NE (CH214A); and K209CX - Grand Island, NE (CH209D) as included in **Exhibit(s) 8(a-b)**. In this instance, the affected station's signal strength at the Translator site has been identified as the 77.1 dBμ F(50:50) service contour, associated with a Translator interference contour adjusted by +40 dBμ per C.F.R. 47 Section 74.1204(a).

Concerning distances between 50 meters of the Translator site to the extent of the interference contour, protection has been demonstrated through a downward radiation study as included in **Exhibit 8a**. Full protection will be afforded all concerns as this portion of the interference area will not reach the ground nor a seven meter artificial plane representing a standard two story house when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern data has been included in **Exhibit 9**.

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Bible Broadcasting Network, Inc.													
REFERENCE		CH#	212D	- 90.3 MHz, Pwr= 0.25 kW, HAAT= 52.1 M, COR= 624 M						DISPLAY DATES			
40 54 50.0 N.		Average Protected F(50-50)= 9.48 km										DATA 03-17-17	
98 23 07.0 W.		Omni-directional										SEARCH 03-19-17	

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)		

212D	K212GG	LIC_C_		0.0	0.00	40 54 50.0	0.250	31.8	9.6	-41.5*	-41.8*		
Grand Island		NE		0.0	BLFT20130815ACO	98 23 07.0	53	623	Bible Broadcasting Network				
210C3	KCVG	LIC_CX		173.7	14.26	40 47 11.0	16.000	3.8	37.0	1.3	-23.9*<		
Hastings		NE		353.7	BLED20170112AAV	98 22 00.0	99	681	Community Broadcasting, In				
214A	KNFA	LIC_CX		270.0	1.05	40 54 50.0	1.300	1.6	16.2	-8.9*<	-16.3*<		
Grand Island		NE		90.0	BLED20100218AAL	98 23 52.0	58	628	Family Worship Center Chur				
212C0	KMNE-FM	LIC_C_		330.3	182.45	42 20 05.0	100.000	182.5	79.5	-9.1*<	73.0		
Bassett		NE		149.6	BLED20150701ACF	99 29 02.0	402	1166	Nebraska Educational Telec				
209D	K209CX	LIC_VN		160.6	0.49	40 54 35.0	0.025	0.4	5.2	-9.1*<	-5.8*<		
Grand Island		NE		340.6	BLFT19990504UD	98 23 00.0	55	625	Pensacola Christian Colleg				
Translator for WPCFSM, Pensacola, FL- Vertical Polarization Only-													
212D	K209EQ	CP_DV_		174.4	35.49	40 35 46.0	0.250	5.6	1.8	20.7	3.2		
Hastings		NE		354.4	BPFT20161114ADE	98 20 39.0		649	Educational Media Foundati				
213A	KQQA	LIC_HX		243.6	33.70	40 46 43.0	0.600	18.8	12.7	6.8	9.5		
Shelton		NE		63.4	BLED20161123AAC	98 44 38.0	45	666	Radio 74 Internationale				
213C2	KGKD	LIC_CX		40.0	91.37	41 32 28.0	10.000	58.6	39.5	22.3	37.3		
Columbus		NE		220.5	BLED20130405AAK	97 40 45.0	170	672	The Praise Network, Inc.				
209D	K209EQ	LIC_DC_		174.4	35.46	40 35 47.0	0.200	0.0	1.8	26.2	32.5		
Hastings		NE		354.4	BLFT20030205AAL	98 20 39.0	72	649	Educational Media Foundati				
213L1	WCGD-LP	LIC_		149.5	69.18	40 22 37.3	0.077			52.3	50.8		
Edgar		NE		329.8	BLL20150608ABD	97 58 14.3	31	555	Central Nebraska Community				
209D	K209CF	CP_DC_		252.0	65.94	40 43 42.0	0.250	1.0	13.5	56.8	51.3		
Kearney		NE		71.5	BPFT20170210AHT	99 07 47.0		776	Bible Broadcasting Network				
209D	K209CF	LIC_CN		250.5	65.62	40 42 53.0	0.140	0.8	12.8	56.7	51.8		
Kearney		NE		70.0	BLFT19970328TC	99 07 10.0	118	783	Bible Broadcasting Network				
Translator for WYFG, Gaffney, SC.													

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. 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.
 < = Contour Overlap

Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

Bible Broadcasting Network, Inc.

FMCommander Single Allocation Study - 03-19-2017 - NED 03 SEC

K212GG.P's Overlaps (In= 20.67 km, Out= 3.24 km)

K212GG.P CH 212 D

Lat= 40 54 50.0, Lng= 98 23 07.0

0.25 kW 52.1 m HAAT, 624 m COR

Prot.= 60 dBu, Intef.= 40 dBu

K209EQ CH 212 D DA BPFT20161114ADE

Lat= 40 35 46.0, Lng= 98 20 39.0

0.25 kW 0 m HAAT, 649 m COR

Prot.= 60 dBu, Intef.= 40 dBu

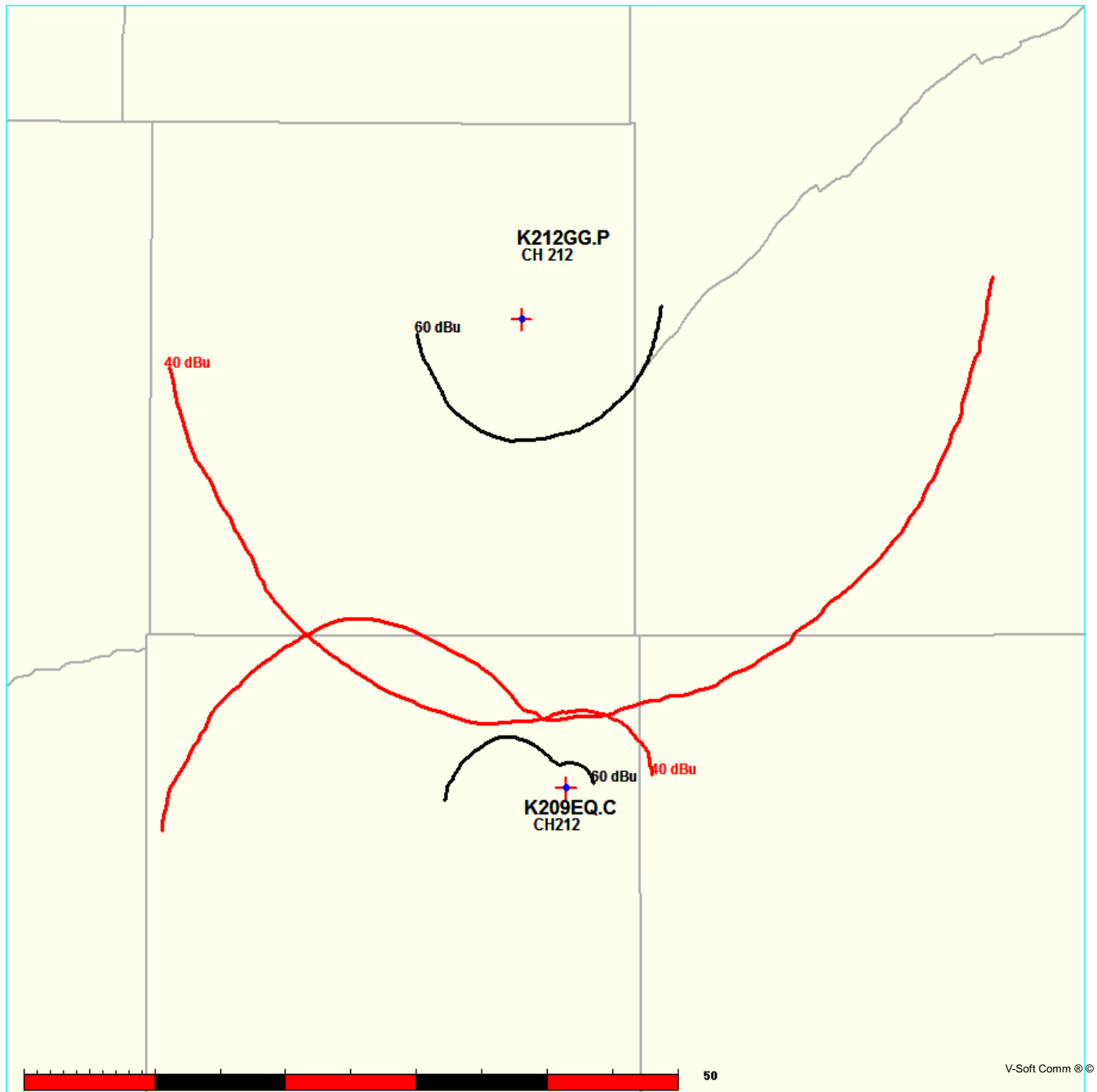


Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

03-19-2017

Terrain Data: NED 03 SEC

FMOver Analysis

K212GG.P

K209EQ BPFT20161114ADE

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 624 m

N. Lat. 40 54 50.0

W. Lng. 98 23 07.0

Protected

60 dBu

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 649 m

N. Lat. 40 35 46.0

W. Lng. 98 20 39.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
131.0	000.2500	0053.4	009.6	007.5	000.0002	0066.9	029.3	12.74	
132.0	000.2500	0053.0	009.6	007.2	000.0002	0066.7	029.2	12.78	
133.0	000.2500	0052.8	009.5	007.0	000.0002	0066.3	029.0	12.81	
134.0	000.2500	0053.1	009.6	006.8	000.0002	0066.1	028.9	12.87	
135.0	000.2500	0053.4	009.6	006.7	000.0002	0066.0	028.7	12.94	
136.0	000.2500	0053.0	009.6	006.4	000.0002	0065.8	028.6	12.98	
137.0	000.2500	0052.6	009.5	006.1	000.0002	0065.5	028.5	13.00	
138.0	000.2500	0052.3	009.5	005.9	000.0002	0065.3	028.4	13.03	
139.0	000.2500	0052.4	009.5	005.6	000.0002	0065.1	028.3	13.09	
140.0	000.2500	0053.0	009.6	005.5	000.0002	0065.0	028.1	13.18	
141.0	000.2500	0052.9	009.6	005.2	000.0002	0064.9	028.0	13.23	
142.0	000.2500	0052.5	009.5	004.9	000.0002	0064.6	027.9	13.24	
143.0	000.2500	0052.3	009.5	004.7	000.0002	0064.5	027.8	13.29	
144.0	000.2500	0052.3	009.5	004.4	000.0002	0064.5	027.7	13.35	
145.0	000.2500	0052.2	009.5	004.1	000.0002	0064.5	027.6	13.42	
146.0	000.2500	0052.3	009.5	003.9	000.0002	0064.3	027.5	13.47	
147.0	000.2500	0052.0	009.5	003.6	000.0002	0064.3	027.4	13.51	
148.0	000.2500	0051.7	009.4	003.2	000.0002	0064.2	027.4	13.54	
149.0	000.2500	0051.5	009.4	002.9	000.0002	0064.0	027.3	13.58	
150.0	000.2500	0051.5	009.4	002.6	000.0002	0063.9	027.2	13.62	
151.0	000.2500	0051.5	009.4	002.3	000.0002	0063.8	027.1	13.66	
152.0	000.2500	0051.7	009.4	002.1	000.0002	0063.7	027.0	13.71	
153.0	000.2500	0051.5	009.4	001.7	000.0002	0063.5	026.9	13.72	
154.0	000.2500	0051.2	009.4	001.4	000.0002	0063.2	026.9	13.72	
155.0	000.2500	0051.0	009.4	001.1	000.0002	0063.1	026.8	13.74	
156.0	000.2500	0050.7	009.3	000.7	000.0002	0062.9	026.8	13.75	
157.0	000.2500	0050.3	009.3	000.4	000.0002	0062.7	026.8	13.74	
158.0	000.2500	0049.9	009.3	000.0	000.0002	0062.5	026.7	13.73	
159.0	000.2500	0049.6	009.2	359.7	000.0002	0062.3	026.7	13.73	
160.0	000.2500	0049.6	009.2	359.4	000.0002	0062.2	026.7	13.75	
161.0	000.2500	0049.4	009.2	359.0	000.0002	0062.1	026.6	13.76	
162.0	000.2500	0049.0	009.2	358.7	000.0002	0062.2	026.6	13.79	
163.0	000.2500	0049.1	009.2	358.3	000.0002	0062.5	026.6	13.85	
164.0	000.2500	0049.1	009.2	358.0	000.0002	0062.7	026.5	13.90	

Exhibit 7a
Contour Protection Studies Toward Select Allocation Concern(s)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)		Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
165.0	000.2500	0049.1	009.2		357.7	000.0002	0062.8	026.5	13.95
166.0	000.2500	0049.2	009.2		357.3	000.0002	0063.0	026.4	14.00
167.0	000.2500	0049.5	009.2		357.0	000.0002	0063.1	026.4	14.05
168.0	000.2500	0049.5	009.2		356.6	000.0002	0063.4	026.4	14.10
169.0	000.2500	0049.4	009.2		356.3	000.0002	0063.5	026.3	14.13
170.0	000.2500	0049.2	009.2		355.9	000.0002	0063.8	026.3	14.16
171.0	000.2500	0048.9	009.2		355.6	000.0002	0063.8	026.4	14.15
172.0	000.2500	0048.8	009.1		355.2	000.0002	0063.3	026.4	14.08
173.0	000.2500	0048.9	009.1		354.9	000.0002	0063.0	026.4	14.05
174.0	000.2500	0049.0	009.2		354.6	000.0002	0062.8	026.3	14.04
175.0	000.2500	0049.1	009.2		354.2	000.0002	0062.6	026.3	14.03
176.0	000.2500	0048.9	009.2		353.9	000.0002	0062.5	026.4	13.99
177.0	000.2500	0048.6	009.1		353.5	000.0002	0062.6	026.4	13.98
178.0	000.2500	0048.8	009.1		353.2	000.0002	0062.6	026.4	13.99
179.0	000.2500	0049.0	009.2		352.8	000.0002	0062.5	026.4	13.97
180.0	000.2500	0049.0	009.2		352.5	000.0002	0062.2	026.4	13.92
181.0	000.2500	0048.9	009.2		352.1	000.0002	0061.8	026.4	13.85
182.0	000.2500	0049.2	009.2		351.8	000.0002	0061.5	026.4	13.82
183.0	000.2500	0049.5	009.2		351.4	000.0002	0061.3	026.4	13.80
184.0	000.2500	0049.7	009.2		351.1	000.0002	0061.1	026.4	13.76
185.0	000.2500	0049.8	009.2		350.7	000.0002	0061.1	026.5	13.74
186.0	000.2500	0050.0	009.3		350.4	000.0002	0061.2	026.5	13.73
187.0	000.2500	0049.8	009.2		350.1	000.0002	0061.2	026.6	13.69
188.0	000.2500	0049.7	009.2		349.7	000.0002	0061.2	026.6	13.65
189.0	000.2500	0049.5	009.2		349.4	000.0002	0061.2	026.7	13.61
190.0	000.2500	0049.3	009.2		349.1	000.0002	0061.1	026.8	13.55
191.0	000.2500	0049.0	009.2		348.8	000.0002	0061.0	026.8	13.48
192.0	000.2500	0048.8	009.1		348.5	000.0002	0060.9	026.9	13.41
193.0	000.2500	0048.7	009.1		348.2	000.0002	0060.9	027.0	13.36
194.0	000.2500	0048.6	009.1		347.9	000.0002	0060.6	027.1	13.27
195.0	000.2500	0048.4	009.1		347.6	000.0002	0060.4	027.2	13.18
196.0	000.2500	0048.1	009.1		347.4	000.0002	0060.2	027.3	13.10
197.0	000.2500	0048.1	009.1		347.1	000.0002	0059.9	027.4	13.01
198.0	000.2500	0048.0	009.1		346.8	000.0002	0059.8	027.4	12.93
199.0	000.2500	0047.8	009.0		346.6	000.0002	0059.7	027.5	12.85
200.0	000.2500	0047.8	009.0		346.3	000.0002	0059.5	027.6	12.77
201.0	000.2500	0047.6	009.0		346.0	000.0002	0059.2	027.7	12.67
202.0	000.2500	0047.3	009.0		345.8	000.0002	0059.0	027.9	12.58
203.0	000.2500	0047.1	009.0		345.6	000.0002	0059.0	028.0	12.50
204.0	000.2500	0046.9	008.9		345.4	000.0002	0058.9	028.1	12.41
205.0	000.2500	0046.7	008.9		345.1	000.0002	0058.7	028.2	12.31
206.0	000.2500	0046.4	008.9		344.9	000.0002	0058.4	028.3	12.21
207.0	000.2500	0046.2	008.9		344.7	000.0002	0058.1	028.4	12.09
208.0	000.2500	0046.1	008.9		344.5	000.0002	0057.9	028.6	11.99
209.0	000.2500	0046.0	008.8		344.3	000.0002	0057.7	028.7	11.90

Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

03-19-2017

Terrain Data: NED 03 SEC

FMOver Analysis

K209EQ BPFT20161114ADE

K212GG.P

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 649 m

N. Lat. 40 35 46.0

W. Lng. 98 20 39.0

Protected

60 dBu

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 624 m

N. Lat. 40 54 50.0

W. Lng. 98 23 07.0

Interfering

40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
309.0	000.0411	0053.8	006.0	182.2	000.2500	0049.2	031.6	39.48	
310.0	000.0380	0053.5	005.9	181.9	000.2500	0049.2	031.5	39.48	
311.0	000.0342	0053.5	005.8	181.6	000.2500	0049.1	031.6	39.46	
312.0	000.0306	0053.5	005.6	181.3	000.2500	0049.0	031.6	39.43	
313.0	000.0272	0053.3	005.5	181.0	000.2500	0048.9	031.6	39.39	
314.0	000.0240	0053.1	005.3	180.6	000.2500	0048.8	031.7	39.36	
315.0	000.0210	0053.1	005.1	180.3	000.2500	0049.0	031.7	39.37	
316.0	000.0182	0053.0	004.9	179.9	000.2500	0049.0	031.8	39.33	
317.0	000.0156	0052.9	004.7	179.6	000.2500	0049.0	031.9	39.30	
318.0	000.0132	0053.0	004.6	179.2	000.2500	0049.0	032.0	39.26	
319.0	000.0110	0053.1	004.4	178.9	000.2500	0049.0	032.0	39.21	
320.0	000.0090	0053.4	004.2	178.6	000.2500	0048.9	032.2	39.15	
321.0	000.0077	0053.4	004.0	178.3	000.2500	0048.9	032.2	39.11	
322.0	000.0066	0053.2	003.8	178.0	000.2500	0048.8	032.3	39.07	
323.0	000.0055	0052.8	003.6	177.8	000.2500	0048.7	032.4	39.00	
324.0	000.0045	0052.5	003.5	177.5	000.2500	0048.7	032.6	38.94	
325.0	000.0036	0052.4	003.3	177.2	000.2500	0048.6	032.7	38.88	
326.0	000.0028	0052.6	003.1	176.9	000.2500	0048.6	032.8	38.82	
327.0	000.0021	0052.8	002.9	176.7	000.2500	0048.7	033.0	38.79	
328.0	000.0015	0053.2	002.7	176.5	000.2500	0048.8	033.1	38.73	
329.0	000.0010	0053.3	002.5	176.2	000.2500	0048.8	033.3	38.66	
330.0	000.0006	0053.8	002.2	175.9	000.2500	0048.9	033.5	38.58	
331.0	000.0006	0054.6	002.2	175.9	000.2500	0048.9	033.5	38.58	
332.0	000.0005	0055.1	002.1	175.8	000.2500	0048.9	033.5	38.58	
333.0	000.0005	0055.7	002.1	175.7	000.2500	0048.9	033.6	38.57	
334.0	000.0004	0056.5	002.1	175.6	000.2500	0048.9	033.6	38.57	
335.0	000.0004	0057.7	002.0	175.5	000.2500	0049.0	033.6	38.56	
336.0	000.0004	0058.1	002.0	175.5	000.2500	0049.0	033.6	38.55	
337.0	000.0003	0058.4	001.9	175.4	000.2500	0049.0	033.7	38.54	
338.0	000.0003	0059.0	001.9	175.3	000.2500	0049.0	033.7	38.53	
339.0	000.0003	0057.5	001.8	175.2	000.2500	0049.0	033.8	38.50	
340.0	000.0002	0057.2	001.7	175.1	000.2500	0049.0	033.8	38.49	
341.0	000.0002	0057.6	001.7	175.1	000.2500	0049.1	033.8	38.49	

Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
342.0	000.0002	0057.7	001.7	175.0	000.2500	0049.1	033.8	38.50
343.0	000.0002	0057.9	001.8	175.0	000.2500	0049.1	033.8	38.51
344.0	000.0002	0057.6	001.7	174.9	000.2500	0049.1	033.8	38.51
345.0	000.0002	0058.5	001.8	174.9	000.2500	0049.2	033.8	38.52
346.0	000.0002	0059.2	001.8	174.8	000.2500	0049.2	033.8	38.53
347.0	000.0002	0059.9	001.8	174.8	000.2500	0049.2	033.7	38.54
348.0	000.0002	0060.7	001.8	174.7	000.2500	0049.2	033.7	38.54
349.0	000.0002	0061.1	001.8	174.7	000.2500	0049.2	033.7	38.55
350.0	000.0002	0061.2	001.8	174.6	000.2500	0049.2	033.7	38.55
351.0	000.0002	0061.1	001.8	174.6	000.2500	0049.2	033.7	38.55
352.0	000.0002	0061.7	001.8	174.5	000.2500	0049.2	033.7	38.55
353.0	000.0002	0062.5	001.8	174.5	000.2500	0049.2	033.7	38.56
354.0	000.0002	0062.5	001.8	174.4	000.2500	0049.2	033.7	38.56
355.0	000.0002	0063.1	001.8	174.4	000.2500	0049.2	033.7	38.56
356.0	000.0002	0063.7	001.8	174.3	000.2500	0049.2	033.7	38.56
357.0	000.0002	0063.1	001.8	174.3	000.2500	0049.2	033.7	38.56
358.0	000.0002	0062.7	001.8	174.2	000.2500	0049.2	033.7	38.55
359.0	000.0002	0062.1	001.8	174.1	000.2500	0049.1	033.7	38.54
000.0	000.0002	0062.5	001.8	174.1	000.2500	0049.1	033.7	38.53
001.0	000.0002	0063.0	001.8	174.0	000.2500	0049.1	033.7	38.53
002.0	000.0002	0063.6	001.8	174.0	000.2500	0049.0	033.7	38.53
003.0	000.0002	0064.1	001.8	173.9	000.2500	0049.1	033.7	38.53
004.0	000.0002	0064.4	001.8	173.9	000.2500	0049.1	033.7	38.53
005.0	000.0002	0064.6	001.8	173.8	000.2500	0049.1	033.7	38.53
006.0	000.0002	0065.4	001.8	173.8	000.2500	0049.1	033.7	38.53
007.0	000.0002	0066.4	001.8	173.7	000.2500	0049.1	033.7	38.53
008.0	000.0002	0067.3	001.8	173.7	000.2500	0049.0	033.7	38.52
009.0	000.0002	0068.4	001.8	173.6	000.2500	0049.0	033.7	38.52
010.0	000.0002	0068.8	001.8	173.5	000.2500	0049.0	033.7	38.52
011.0	000.0002	0068.8	001.8	173.5	000.2500	0049.0	033.7	38.51
012.0	000.0002	0069.2	001.8	173.4	000.2500	0049.0	033.7	38.51
013.0	000.0002	0069.7	001.9	173.4	000.2500	0049.0	033.7	38.50
014.0	000.0002	0070.2	001.9	173.3	000.2500	0049.0	033.8	38.49
015.0	000.0002	0070.4	001.9	173.3	000.2500	0048.9	033.8	38.49
016.0	000.0002	0070.2	001.9	173.2	000.2500	0048.9	033.8	38.48
017.0	000.0002	0070.5	001.9	173.2	000.2500	0048.9	033.8	38.47
018.0	000.0002	0071.2	001.9	173.1	000.2500	0048.9	033.8	38.46
019.0	000.0002	0071.5	001.9	173.1	000.2500	0048.9	033.8	38.45
020.0	000.0002	0071.8	001.9	173.0	000.2500	0048.9	033.8	38.45
021.0	000.0002	0071.9	001.9	173.0	000.2500	0048.8	033.8	38.44
022.0	000.0002	0072.1	001.9	172.9	000.2500	0048.9	033.9	38.44
023.0	000.0002	0073.0	001.9	172.9	000.2500	0048.9	033.9	38.43
024.0	000.0002	0072.9	001.9	172.8	000.2500	0048.9	033.9	38.43
025.0	000.0002	0073.6	001.9	172.8	000.2500	0048.9	033.9	38.43

Exhibit 7b

Contour Protection Studies Toward Select Allocation Concern(s)

Bible Broadcasting Network, Inc.

FMCommander Single Allocation Study - 03-19-2017 - NED 03 SEC
K212GG.P's Overlaps (In= 6.83 km, Out= 9.54 km)

K212GG.P CH 212 D
Lat= 40 54 50.0, Lng= 98 23 07.0
0.25 kW 52.1 m HAAT, 624 m COR
Prot.= 60 dBu, Intef.= 54 dBu

KQQA CH 213 A BLED20161123AAC
Lat= 40 46 43.0, Lng= 98 44 38.0
0.6 kW 45 m HAAT, 666 m COR
Prot.= 60 dBu, Intef.= 54 dBu

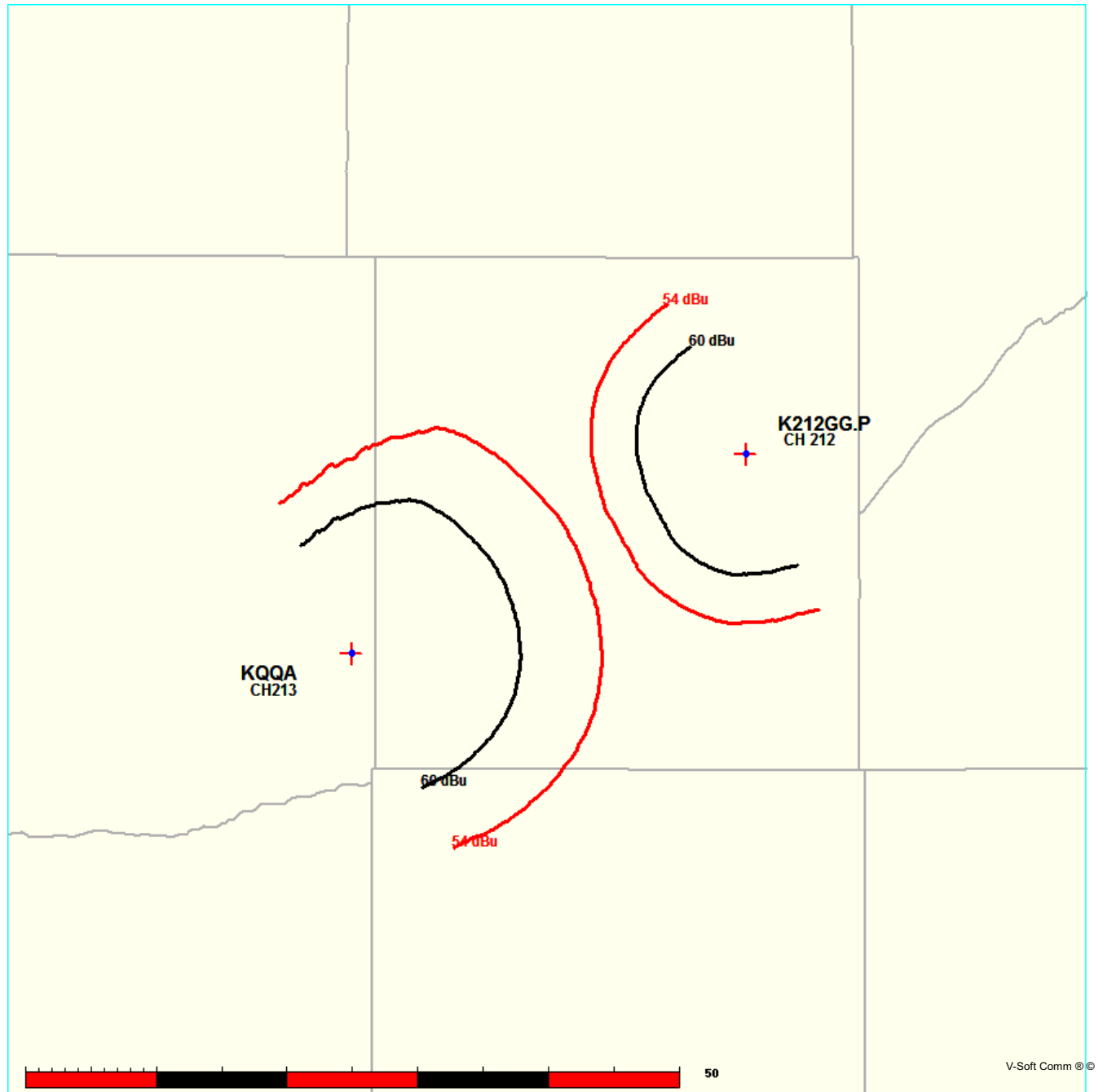


Exhibit 7b

Contour Protection Studies Toward Select Allocation Concern(s)

03-19-2017

Terrain Data: NED 03 SEC

FMOver Analysis

K212GG.P

KQQA BLED20161123AAC

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 624 m

N. Lat. 40 54 50.0

W. Lng. 98 23 07.0

Protected

60 dBu

Channel = 213A

Max ERP = 0.6 kW

RCAMSL = 666 m

N. Lat. 40 46 43.0

W. Lng. 98 44 38.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
202.0	000.2500	0047.3	009.0	075.8	000.6000	0063.0	027.6	47.49	
203.0	000.2500	0047.1	009.0	075.6	000.6000	0063.0	027.5	47.56	
204.0	000.2500	0046.9	008.9	075.4	000.6000	0063.0	027.4	47.63	
205.0	000.2500	0046.7	008.9	075.1	000.6000	0063.1	027.3	47.70	
206.0	000.2500	0046.4	008.9	074.9	000.6000	0063.1	027.2	47.77	
207.0	000.2500	0046.2	008.9	074.6	000.6000	0063.1	027.1	47.83	
208.0	000.2500	0046.1	008.9	074.4	000.6000	0063.1	027.0	47.90	
209.0	000.2500	0046.0	008.8	074.1	000.6000	0063.1	026.9	47.97	
210.0	000.2500	0045.8	008.8	073.9	000.6000	0063.1	026.8	48.03	
211.0	000.2500	0045.5	008.8	073.6	000.6000	0063.0	026.7	48.08	
212.0	000.2500	0045.3	008.8	073.3	000.6000	0063.0	026.6	48.13	
213.0	000.2500	0045.2	008.8	073.1	000.6000	0063.0	026.5	48.19	
214.0	000.2500	0045.1	008.7	072.8	000.6000	0063.0	026.5	48.25	
215.0	000.2500	0044.9	008.7	072.5	000.6000	0063.0	026.4	48.30	
216.0	000.2500	0044.7	008.7	072.2	000.6000	0063.0	026.3	48.35	
217.0	000.2500	0044.6	008.7	071.9	000.6000	0063.0	026.2	48.39	
218.0	000.2500	0044.4	008.7	071.6	000.6000	0062.9	026.2	48.44	
219.0	000.2500	0044.2	008.6	071.3	000.6000	0062.9	026.1	48.48	
220.0	000.2500	0044.0	008.6	071.0	000.6000	0062.9	026.0	48.52	
221.0	000.2500	0043.7	008.6	070.7	000.6000	0062.8	026.0	48.54	
222.0	000.2500	0043.6	008.6	070.4	000.6000	0062.8	025.9	48.58	
223.0	000.2500	0043.3	008.5	070.0	000.6000	0062.7	025.9	48.60	
224.0	000.2500	0043.0	008.5	069.7	000.6000	0062.7	025.9	48.61	
225.0	000.2500	0042.2	008.4	069.3	000.6000	0062.6	025.9	48.59	
226.0	000.2500	0042.0	008.4	069.0	000.6000	0062.6	025.8	48.62	
227.0	000.2500	0041.5	008.3	068.7	000.6000	0062.7	025.8	48.64	
228.0	000.2500	0041.0	008.3	068.3	000.6000	0062.8	025.8	48.65	
229.0	000.2500	0040.5	008.2	068.0	000.6000	0062.8	025.8	48.65	
230.0	000.2500	0040.3	008.2	067.7	000.6000	0062.8	025.8	48.65	
231.0	000.2500	0040.1	008.2	067.3	000.6000	0062.8	025.8	48.67	
232.0	000.2500	0039.9	008.2	067.0	000.6000	0062.7	025.8	48.68	
233.0	000.2500	0039.8	008.1	066.7	000.6000	0062.8	025.8	48.69	
234.0	000.2500	0039.7	008.1	066.4	000.6000	0062.7	025.7	48.71	

Exhibit 7b

Contour Protection Studies Toward Select Allocation Concern(s)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
235.0	000.2500	0039.4	008.1	066.1	000.6000	0062.7	025.7	48.70
236.0	000.2500	0039.1	008.1	065.8	000.6000	0062.6	025.7	48.69
237.0	000.2500	0039.2	008.1	065.5	000.6000	0062.6	025.7	48.71
238.0	000.2500	0039.2	008.1	065.1	000.6000	0062.7	025.7	48.73
239.0	000.2500	0039.2	008.1	064.8	000.6000	0062.7	025.7	48.74
240.0	000.2500	0039.0	008.1	064.5	000.6000	0062.7	025.7	48.75
241.0	000.2500	0038.9	008.0	064.2	000.6000	0062.6	025.7	48.72
242.0	000.2500	0038.9	008.0	063.9	000.6000	0062.6	025.7	48.72
243.0	000.2500	0038.8	008.0	063.6	000.6000	0062.5	025.7	48.70
244.0	000.2500	0039.0	008.0	063.3	000.6000	0062.4	025.7	48.71
245.0	000.2500	0039.1	008.1	062.9	000.6000	0062.4	025.6	48.71
246.0	000.2500	0039.4	008.1	062.6	000.6000	0062.3	025.6	48.73
247.0	000.2500	0039.6	008.1	062.3	000.6000	0062.3	025.6	48.73
248.0	000.2500	0039.8	008.1	062.0	000.6000	0062.3	025.6	48.74
249.0	000.2500	0039.8	008.1	061.7	000.6000	0062.4	025.6	48.74
250.0	000.2500	0039.6	008.1	061.4	000.6000	0062.4	025.6	48.72
251.0	000.2500	0039.6	008.1	061.0	000.6000	0062.4	025.7	48.71
252.0	000.2500	0039.5	008.1	060.7	000.6000	0062.4	025.7	48.68
253.0	000.2500	0039.5	008.1	060.4	000.6000	0062.4	025.7	48.66
254.0	000.2500	0039.5	008.1	060.1	000.6000	0062.4	025.8	48.63
255.0	000.2500	0039.5	008.1	059.8	000.6000	0062.4	025.8	48.60
256.0	000.2500	0039.6	008.1	059.5	000.6000	0062.3	025.8	48.58
257.0	000.2500	0039.6	008.1	059.2	000.6000	0062.3	025.9	48.54
258.0	000.2500	0039.6	008.1	058.9	000.6000	0062.2	025.9	48.50
259.0	000.2500	0039.7	008.1	058.6	000.6000	0062.2	026.0	48.48
260.0	000.2500	0039.7	008.1	058.3	000.6000	0062.2	026.0	48.44
261.0	000.2500	0039.7	008.1	058.0	000.6000	0062.2	026.1	48.41
262.0	000.2500	0039.9	008.1	057.7	000.6000	0062.2	026.1	48.38
263.0	000.2500	0040.1	008.2	057.4	000.6000	0062.1	026.1	48.35
264.0	000.2500	0040.2	008.2	057.1	000.6000	0062.1	026.2	48.32
265.0	000.2500	0040.4	008.2	056.8	000.6000	0062.1	026.2	48.28
266.0	000.2500	0040.8	008.3	056.5	000.6000	0062.1	026.3	48.26
267.0	000.2500	0040.9	008.3	056.2	000.6000	0062.0	026.3	48.21
268.0	000.2500	0041.0	008.3	055.9	000.6000	0062.0	026.4	48.16
269.0	000.2500	0041.3	008.3	055.6	000.6000	0061.9	026.4	48.12
270.0	000.2500	0041.6	008.3	055.3	000.6000	0061.9	026.5	48.08
271.0	000.2500	0041.6	008.3	055.1	000.6000	0061.8	026.6	48.02
272.0	000.2500	0041.7	008.4	054.8	000.6000	0061.6	026.6	47.95
273.0	000.2500	0041.8	008.4	054.5	000.6000	0061.6	026.7	47.89
274.0	000.2500	0042.0	008.4	054.3	000.6000	0061.5	026.8	47.83
275.0	000.2500	0042.0	008.4	054.0	000.6000	0061.5	026.9	47.76
276.0	000.2500	0042.2	008.4	053.8	000.6000	0061.4	027.0	47.70
277.0	000.2500	0042.4	008.4	053.5	000.6000	0061.3	027.1	47.64
278.0	000.2500	0042.6	008.5	053.2	000.6000	0061.3	027.1	47.57
279.0	000.2500	0042.7	008.5	053.0	000.6000	0061.3	027.2	47.51

Exhibit 7b

Contour Protection Studies Toward Select Allocation Concern(s)

03-19-2017

Terrain Data: NED 03 SEC

FMOver Analysis

KQQA BLED20161123AAC

K212GG.P

Channel = 213A

Max ERP = 0.6 kW

RCAMSL = 666 m

N. Lat. 40 46 43.0

W. Lng. 98 44 38.0

Protected

60 dBu

Channel = 212D

Max ERP = 0.25 kW

RCAMSL = 624 m

N. Lat. 40 54 50.0

W. Lng. 98 23 07.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
018.0	000.6000	0054.2	012.0	262.2	000.2500	0039.9	026.7	40.33	
019.0	000.6000	0055.3	012.1	262.2	000.2500	0040.0	026.5	40.48	
020.0	000.6000	0056.6	012.2	262.3	000.2500	0040.0	026.2	40.65	
021.0	000.6000	0057.8	012.3	262.3	000.2500	0040.0	026.0	40.81	
022.0	000.6000	0058.3	012.4	262.2	000.2500	0039.9	025.7	40.94	
023.0	000.6000	0058.7	012.4	262.0	000.2500	0039.9	025.5	41.06	
024.0	000.6000	0058.8	012.4	261.7	000.2500	0039.8	025.4	41.18	
025.0	000.6000	0059.3	012.5	261.6	000.2500	0039.7	025.1	41.31	
026.0	000.6000	0059.5	012.5	261.3	000.2500	0039.7	025.0	41.43	
027.0	000.6000	0059.7	012.5	261.1	000.2500	0039.7	024.8	41.55	
028.0	000.6000	0059.9	012.5	260.8	000.2500	0039.7	024.6	41.68	
029.0	000.6000	0059.8	012.5	260.4	000.2500	0039.7	024.4	41.80	
030.0	000.6000	0059.9	012.5	260.1	000.2500	0039.7	024.2	41.93	
031.0	000.6000	0059.8	012.5	259.8	000.2500	0039.7	024.1	42.04	
032.0	000.6000	0060.0	012.5	259.5	000.2500	0039.7	023.9	42.16	
033.0	000.6000	0060.0	012.5	259.1	000.2500	0039.7	023.7	42.28	
034.0	000.6000	0060.1	012.5	258.7	000.2500	0039.6	023.6	42.38	
035.0	000.6000	0060.2	012.6	258.4	000.2500	0039.6	023.4	42.48	
036.0	000.6000	0060.4	012.6	258.0	000.2500	0039.6	023.3	42.61	
037.0	000.6000	0060.4	012.6	257.6	000.2500	0039.6	023.1	42.71	
038.0	000.6000	0060.3	012.6	257.2	000.2500	0039.6	023.0	42.81	
039.0	000.6000	0060.4	012.6	256.7	000.2500	0039.6	022.8	42.91	
040.0	000.6000	0060.3	012.6	256.3	000.2500	0039.6	022.7	43.01	
041.0	000.6000	0060.3	012.6	255.8	000.2500	0039.6	022.6	43.11	
042.0	000.6000	0060.3	012.6	255.4	000.2500	0039.5	022.5	43.19	
043.0	000.6000	0060.1	012.6	254.9	000.2500	0039.5	022.4	43.26	
044.0	000.6000	0060.2	012.6	254.4	000.2500	0039.5	022.3	43.35	
045.0	000.6000	0060.2	012.6	253.9	000.2500	0039.5	022.1	43.44	
046.0	000.6000	0060.2	012.6	253.4	000.2500	0039.5	022.0	43.52	
047.0	000.6000	0060.3	012.6	252.9	000.2500	0039.5	021.9	43.60	
048.0	000.6000	0060.4	012.6	252.4	000.2500	0039.5	021.8	43.67	
049.0	000.6000	0060.7	012.6	251.9	000.2500	0039.5	021.7	43.77	
050.0	000.6000	0060.9	012.6	251.4	000.2500	0039.6	021.6	43.86	

Exhibit 7b

Contour Protection Studies Toward Select Allocation Concern(s)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
051.0	000.6000	0061.1	012.6	250.8	000.2500	0039.6	021.5	43.94
052.0	000.6000	0061.2	012.6	250.3	000.2500	0039.6	021.5	44.00
053.0	000.6000	0061.3	012.6	249.7	000.2500	0039.7	021.4	44.06
054.0	000.6000	0061.4	012.7	249.2	000.2500	0039.8	021.3	44.15
055.0	000.6000	0061.7	012.7	248.6	000.2500	0039.8	021.2	44.21
056.0	000.6000	0062.0	012.7	248.0	000.2500	0039.8	021.2	44.26
057.0	000.6000	0062.1	012.7	247.5	000.2500	0039.7	021.1	44.28
058.0	000.6000	0062.2	012.7	246.9	000.2500	0039.6	021.1	44.30
059.0	000.6000	0062.2	012.7	246.3	000.2500	0039.5	021.0	44.30
060.0	000.6000	0062.4	012.7	245.7	000.2500	0039.3	021.0	44.28
061.0	000.6000	0062.4	012.8	245.1	000.2500	0039.1	021.0	44.26
062.0	000.6000	0062.3	012.7	244.5	000.2500	0039.0	021.0	44.24
063.0	000.6000	0062.4	012.7	243.8	000.2500	0038.9	021.0	44.23
064.0	000.6000	0062.6	012.8	243.2	000.2500	0038.8	020.9	44.21
065.0	000.6000	0062.7	012.8	242.6	000.2500	0038.8	020.9	44.21
066.0	000.6000	0062.7	012.8	242.0	000.2500	0038.9	021.0	44.22
067.0	000.6000	0062.7	012.8	241.4	000.2500	0038.9	021.0	44.21
068.0	000.6000	0062.8	012.8	240.8	000.2500	0038.9	021.0	44.20
069.0	000.6000	0062.6	012.8	240.2	000.2500	0039.0	021.0	44.19
070.0	000.6000	0062.7	012.8	239.6	000.2500	0039.1	021.1	44.17
071.0	000.6000	0062.9	012.8	239.0	000.2500	0039.2	021.1	44.17
072.0	000.6000	0063.0	012.8	238.4	000.2500	0039.2	021.1	44.15
073.0	000.6000	0063.0	012.8	237.8	000.2500	0039.3	021.2	44.12
074.0	000.6000	0063.1	012.8	237.2	000.2500	0039.3	021.2	44.07
075.0	000.6000	0063.1	012.8	236.7	000.2500	0039.2	021.3	44.01
076.0	000.6000	0063.0	012.8	236.1	000.2500	0039.1	021.4	43.93
077.0	000.6000	0063.2	012.8	235.5	000.2500	0039.2	021.5	43.89
078.0	000.6000	0063.4	012.8	235.0	000.2500	0039.4	021.5	43.89
079.0	000.6000	0063.5	012.8	234.4	000.2500	0039.6	021.6	43.86
080.0	000.6000	0063.8	012.9	233.8	000.2500	0039.7	021.7	43.83
081.0	000.6000	0063.8	012.9	233.3	000.2500	0039.8	021.8	43.77
082.0	000.6000	0063.9	012.9	232.8	000.2500	0039.8	021.9	43.69
083.0	000.6000	0063.9	012.9	232.3	000.2500	0039.8	022.0	43.62
084.0	000.6000	0063.8	012.9	231.8	000.2500	0039.9	022.1	43.54
085.0	000.6000	0064.0	012.9	231.3	000.2500	0040.0	022.2	43.47
086.0	000.6000	0063.8	012.9	230.8	000.2500	0040.1	022.4	43.39
087.0	000.6000	0063.9	012.9	230.4	000.2500	0040.2	022.5	43.31
088.0	000.6000	0064.2	012.9	229.9	000.2500	0040.3	022.6	43.25
089.0	000.6000	0064.2	012.9	229.4	000.2500	0040.4	022.8	43.17
090.0	000.6000	0064.5	012.9	228.9	000.2500	0040.6	022.9	43.11
091.0	000.6000	0064.8	013.0	228.5	000.2500	0040.7	023.0	43.04
092.0	000.6000	0064.8	012.9	228.1	000.2500	0040.9	023.2	42.97
093.0	000.6000	0064.7	012.9	227.7	000.2500	0041.1	023.3	42.89
094.0	000.6000	0064.6	012.9	227.3	000.2500	0041.3	023.5	42.80

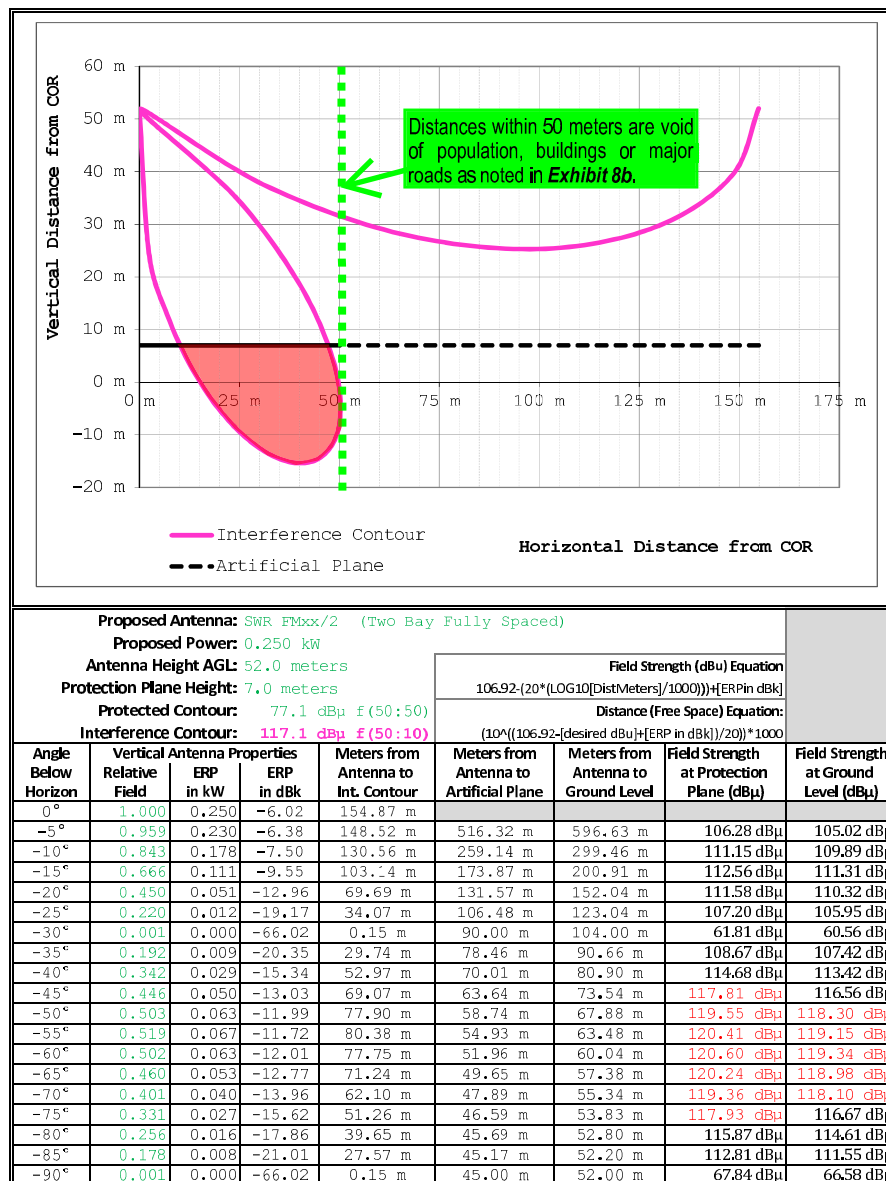
Exhibit 8a

C.F.R. Section 74.1204(d) Second / Third Adjacent Given Interference Waiver Request

Yellow Highlighted Text denotes the existence of a C.F.R. 47 Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Request toward KCVG(FM) - Hastings, NE (CH210C3); KNFA(FM) - Grand Island, NE (CH214A); and K209CX - Grand Island, NE (CH209D) as included in **Exhibit(s) 8(a-b)**. In this instance, the affected station's signal strength at the Translator site has been identified as the 77.1 dBμ F (50:50) service contour, associated with a Translator interference contour adjusted by +40 dBμ per C.F.R. 47 Section 74.1204(a).

Concerning distances between 50 meters of the Translator site to the extent of the interference contour, protection has been demonstrated through a downward radiation study as included in **Exhibit 8a**. Full protection will be afforded all concerns as this portion of the interference area will not reach the ground nor a seven meter artificial plane representing a standard two story house when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern data has been included in **Exhibit 9**.

Concerning distances within 50 meters of the Translator site, protection has been demonstrated through aerial photography of the area as included in **Exhibit 8b**. Full protection will be afforded all concerns as this portion of the interference area is void of all housing, buildings or major roads representing locations where people live, work or travel on a regular basis. The applicant would like to note the existence of the dedicated transmitter building within this affected radius, however, buildings of this nature have been routinely exempt as a matter of FCC Policy (see similar grant under BPFT-20160129ALR).



Site Coordinates (NGS NADCON)

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum:	40 54 50.25545	98 23 6.87056
NAD 83 datum:	40 54 50.30000	98 23 8.10000

Exhibit 8b §74.1204(d) 2nd/3rd Adjacent Channel Given Interference Waiver Request with

KCVG(FM) - Hastings, NE (CH210C3)
KNFA(FM) - Grand Island, NE (CH214A)
K209CX - Grand Island, NE (CH209D)

50 meter Radius

The applicant would like to note the existence of a C.F.R. 47 Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Request toward KCVG(FM) - Hastings, NE (CH210C3); KNFA(FM) - Grand Island, NE (CH214A); and K209CX - Grand Island, NE (CH209D) as included in *Exhibit(s) 8(a-b)*. In this instance, the affected station's signal strength at the Translator site has been identified as the 77.1 dBμ F(50:50) service contour, associated with a Translator interference contour adjusted by +40 dBμ per C.F.R. 47 Section 74.1204(a).

Concerning distances between 50 meters of the Translator site to the extent of the interference contour, protection has been demonstrated through a downward radiation study as included in *Exhibit 8a*. Full protection will be afforded all concerns as this portion of the interference area will not reach the ground nor a seven meter artificial plane representing a standard two story house when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer's vertical radiation pattern data has been included in *Exhibit 9*.

Concerning distances within 50 meters of the Translator site, protection has been demonstrated through aerial photography of the area as included in *Exhibit 8b*. Full protection will be afforded all concerns as this portion of the interference area is void of all housing, buildings or major roads representing locations where people live, work or travel on a regular basis. The applicant would like to note the existence of the dedicated transmitter building within this affected radius, however, buildings of this nature have been routinely exempt as a matter of FCC Policy (see similar grant under BPFT-20160129ALR).

Dedicated transmitter building. Structures of this nature have been exempt as a matter of FCC Policy (see similar grant under BPFT-20160129ALR)

Asher Broadcast Consulting LLC
justinasher@consultant.com
1 (202) 875-2986

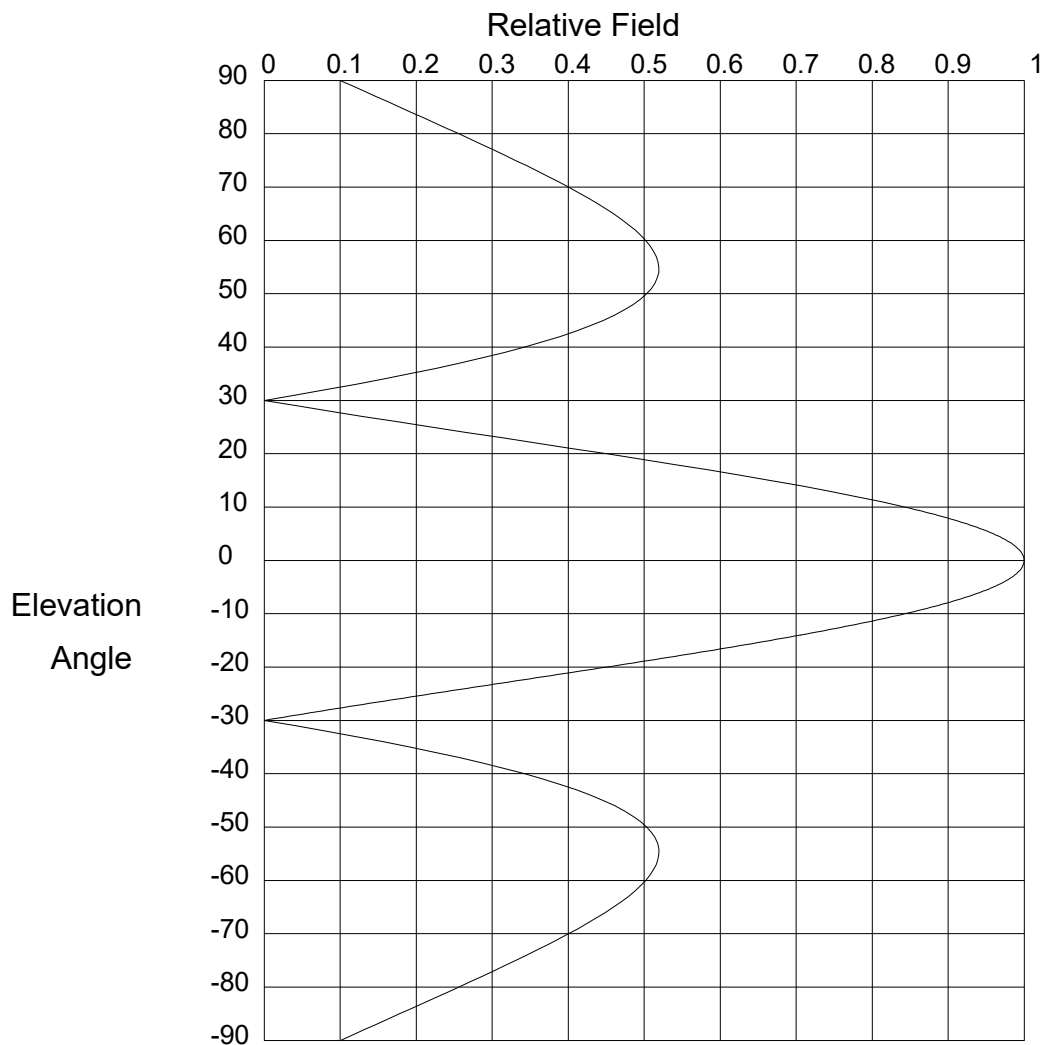
Google Earth

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300 ft

***Exhibit 9 - Copy of Manufacturer's
Vertical Radiation Pattern Documentation
(public record copy)***



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

CLIENT:

Date: 11/28/2016

ANTENNA TYPE: FMxx/2

FREQUENCY: 98.1 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%) : 0, 0, 0

**Exhibit 9 - Copy of Manufacturer's
Vertical Radiation Pattern Documentation
(public record copy)**

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
90.0	.10 (-20)	52.0	.514 (-5.775)	14.0	.705 (-3.031)
89.0	.116 (-18.733)	51.0	.51 (-5.855)	13.0	.743 (-2.581)
88.0	.131 (-17.627)	50.0	.503 (-5.963)	12.0	.779 (-2.174)
87.0	.147 (-16.648)	49.0	.495 (-6.101)	11.0	.812 (-1.809)
86.0	.163 (-15.768)	48.0	.486 (-6.272)	10.0	.843 (-1.482)
85.0	.178 (-14.971)	47.0	.474 (-6.479)	9.8	.849 (-1.421)
84.0	.194 (-14.242)	46.0	.461 (-6.724)	9.6	.855 (-1.361)
83.0	.21 (-13.571)	45.0	.446 (-7.013)	9.4	.861 (-1.303)
82.0	.225 (-12.951)	44.0	.429 (-7.349)	9.2	.866 (-1.246)
81.0	.241 (-12.374)	43.0	.41 (-7.738)	9.0	.872 (-1.191)
80.0	.256 (-11.835)	42.0	.39 (-8.189)	8.8	.877 (-1.137)
79.0	.271 (-11.332)	41.0	.367 (-8.709)	8.6	.883 (-1.084)
78.0	.286 (-10.859)	40.0	.342 (-9.31)	8.4	.888 (-1.033)
77.0	.301 (-10.415)	39.0	.316 (-10.008)	8.2	.893 (-0.983)
76.0	.316 (-9.997)	38.0	.288 (-10.824)	8.0	.898 (-0.935)
75.0	.331 (-9.603)	37.0	.257 (-11.786)	7.8	.903 (-0.887)
74.0	.345 (-9.231)	36.0	.225 (-12.937)	7.6	.908 (-0.841)
73.0	.36 (-8.881)	35.0	.192 (-14.343)	7.4	.912 (-0.797)
72.0	.374 (-8.551)	34.0	.156 (-16.113)	7.2	.917 (-0.753)
71.0	.387 (-8.24)	33.0	.119 (-18.454)	7.0	.921 (-0.711)
70.0	.401 (-7.948)	32.0	.081 (-21.828)	6.8	.926 (-0.67)
69.0	.413 (-7.673)	31.0	.041 (-27.712)	6.6	.93 (-0.631)
68.0	.426 (-7.417)	30.0	.00 (-50)	6.4	.934 (-0.593)
67.0	.438 (-7.178)	29.0	.042 (-27.469)	6.2	.938 (-0.556)
66.0	.449 (-6.956)	28.0	.086 (-21.343)	6.0	.942 (-0.52)
65.0	.46 (-6.751)	27.0	.13 (-17.727)	5.8	.946 (-0.485)
64.0	.47 (-6.563)	26.0	.175 (-15.145)	5.6	.949 (-0.452)
63.0	.479 (-6.392)	25.0	.22 (-13.135)	5.4	.953 (-0.42)
62.0	.488 (-6.239)	24.0	.266 (-11.491)	5.2	.956 (-0.389)
61.0	.495 (-6.103)	23.0	.312 (-10.103)	5.0	.959 (-0.36)
60.0	.502 (-5.986)	22.0	.359 (-8.906)	4.8	.963 (-0.331)
59.0	.508 (-5.887)	21.0	.405 (-7.858)	4.6	.966 (-0.304)
58.0	.512 (-5.807)	20.0	.45 (-6.929)	4.4	.969 (-0.278)
57.0	.516 (-5.747)	19.0	.495 (-6.1)	4.2	.971 (-0.253)
56.0	.518 (-5.708)	18.0	.54 (-5.356)	4.0	.974 (-0.229)
55.0	.519 (-5.69)	17.0	.583 (-4.685)	3.8	.976 (-0.207)
54.0	.519 (-5.694)	16.0	.625 (-4.078)	3.6	.979 (-0.186)
53.0	.517 (-5.722)	15.0	.666 (-3.528)	3.4	.981 (-0.165)

Systems With Reliability

Page 1 of 3

CLIENT:

Date: 11/28/2016

ANTENNA TYPE: FMxx/2

FREQUENCY: 98.1 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%) : 0, 0, 0

**Exhibit 9 - Copy of Manufacturer's
Vertical Radiation Pattern Documentation
(public record copy)**

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.983 (-0.146)	-4.4	.969 (-0.278)	-12.0	.779 (-2.174)
3.0	.985 (-0.129)	-4.6	.966 (-0.304)	-12.2	.772 (-2.252)
2.8	.987 (-0.112)	-4.8	.963 (-0.331)	-12.4	.765 (-2.332)
2.6	.989 (-0.097)	-5.0	.959 (-0.36)	-12.6	.757 (-2.413)
2.4	.991 (-0.082)	-5.2	.956 (-0.389)	-12.8	.75 (-2.496)
2.2	.992 (-0.069)	-5.4	.953 (-0.42)	-13.0	.743 (-2.581)
2.0	.993 (-0.057)	-5.6	.949 (-0.452)	-13.2	.736 (-2.667)
1.8	.995 (-0.046)	-5.8	.946 (-0.485)	-13.4	.728 (-2.755)
1.6	.996 (-0.037)	-6.0	.942 (-0.52)	-13.6	.721 (-2.845)
1.4	.997 (-0.028)	-6.2	.938 (-0.556)	-13.8	.713 (-2.937)
1.2	.998 (-0.021)	-6.4	.934 (-0.593)	-14.0	.705 (-3.031)
1.0	.998 (-0.014)	-6.6	.93 (-0.631)	-14.2	.698 (-3.126)
.8	.999 (-0.009)	-6.8	.926 (-0.67)	-14.4	.69 (-3.224)
.6	.999 (-0.005)	-7.0	.921 (-0.711)	-14.6	.682 (-3.323)
.4	1.00 (-0.002)	-7.2	.917 (-0.753)	-14.8	.674 (-3.425)
.2	1.00 (-0.001)	-7.4	.912 (-0.797)	-15.0	.666 (-3.528)
.0	1.00 (0)	-7.6	.908 (-0.841)	-15.2	.658 (-3.634)
-.2	1.00 (-0.001)	-7.8	.903 (-0.887)	-15.4	.65 (-3.742)
-.4	1.00 (-0.002)	-8.0	.898 (-0.935)	-15.6	.642 (-3.851)
-.6	.999 (-0.005)	-8.2	.893 (-0.983)	-15.8	.634 (-3.963)
-.8	.999 (-0.009)	-8.4	.888 (-1.033)	-16.0	.625 (-4.078)
-1.0	.998 (-0.014)	-8.6	.883 (-1.084)	-16.2	.617 (-4.194)
-1.2	.998 (-0.021)	-8.8	.877 (-1.137)	-16.4	.609 (-4.313)
-1.4	.997 (-0.028)	-9.0	.872 (-1.191)	-16.6	.60 (-4.435)
-1.6	.996 (-0.037)	-9.2	.866 (-1.246)	-16.8	.592 (-4.558)
-1.8	.995 (-0.046)	-9.4	.861 (-1.303)	-17.0	.583 (-4.685)
-2.0	.993 (-0.057)	-9.6	.855 (-1.361)	-17.2	.575 (-4.814)
-2.2	.992 (-0.069)	-9.8	.849 (-1.421)	-17.4	.566 (-4.945)
-2.4	.991 (-0.082)	-10.0	.843 (-1.482)	-17.6	.557 (-5.079)
-2.6	.989 (-0.097)	-10.2	.837 (-1.544)	-17.8	.549 (-5.216)
-2.8	.987 (-0.112)	-10.4	.831 (-1.608)	-18.0	.54 (-5.356)
-3.0	.985 (-0.129)	-10.6	.825 (-1.674)	-18.2	.531 (-5.499)
-3.2	.983 (-0.146)	-10.8	.818 (-1.74)	-18.4	.522 (-5.644)
-3.4	.981 (-0.165)	-11.0	.812 (-1.809)	-18.6	.513 (-5.793)
-3.6	.979 (-0.186)	-11.2	.805 (-1.879)	-18.8	.504 (-5.945)
-3.8	.976 (-0.207)	-11.4	.799 (-1.95)	-19.0	.495 (-6.1)
-4.0	.974 (-0.229)	-11.6	.792 (-2.023)	-19.2	.486 (-6.259)
-4.2	.971 (-0.253)	-11.8	.785 (-2.098)	-19.4	.477 (-6.421)

Systems With Reliability

Page 2 of 3

CLIENT:

Date: 11/28/2016

ANTENNA TYPE: FMxx/2

FREQUENCY: 98.1 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%) : 0, 0, 0

***Exhibit 9 - Copy of Manufacturer's
Vertical Radiation Pattern Documentation
(public record copy)***

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.468 (-6.587)	-27.2	.121 (-18.344)	-54.0	.519 (-5.694)
-19.8	.459 (-6.756)	-27.4	.112 (-19.006)	-55.0	.519 (-5.69)
-20.0	.45 (-6.929)	-27.6	.103 (-19.721)	-56.0	.518 (-5.708)
-20.2	.441 (-7.106)	-27.8	.094 (-20.496)	-57.0	.516 (-5.747)
-20.4	.432 (-7.288)	-28.0	.086 (-21.343)	-58.0	.512 (-5.807)
-20.6	.423 (-7.473)	-28.2	.077 (-22.278)	-59.0	.508 (-5.887)
-20.8	.414 (-7.663)	-28.4	.068 (-23.322)	-60.0	.502 (-5.986)
-21.0	.405 (-7.858)	-28.6	.06 (-24.503)	-61.0	.495 (-6.103)
-21.2	.396 (-8.057)	-28.8	.051 (-25.863)	-62.0	.488 (-6.239)
-21.4	.386 (-8.261)	-29.0	.042 (-27.469)	-63.0	.479 (-6.392)
-21.6	.377 (-8.471)	-29.2	.034 (-29.429)	-64.0	.47 (-6.563)
-21.8	.368 (-8.686)	-29.4	.025 (-31.951)	-65.0	.46 (-6.751)
-22.0	.359 (-8.906)	-29.6	.017 (-35.496)	-66.0	.449 (-6.956)
-22.2	.349 (-9.132)	-29.8	.008 (-41.54)	-67.0	.438 (-7.178)
-22.4	.34 (-9.365)	-30.0	.00 (-50)	-68.0	.426 (-7.417)
-22.6	.331 (-9.604)	-31.0	.041 (-27.712)	-69.0	.413 (-7.673)
-22.8	.322 (-9.85)	-32.0	.081 (-21.828)	-70.0	.401 (-7.948)
-23.0	.312 (-10.103)	-33.0	.119 (-18.454)	-71.0	.387 (-8.24)
-23.2	.303 (-10.364)	-34.0	.156 (-16.113)	-72.0	.374 (-8.551)
-23.4	.294 (-10.632)	-35.0	.192 (-14.343)	-73.0	.36 (-8.881)
-23.6	.285 (-10.909)	-36.0	.225 (-12.937)	-74.0	.345 (-9.231)
-23.8	.276 (-11.195)	-37.0	.257 (-11.786)	-75.0	.331 (-9.603)
-24.0	.266 (-11.491)	-38.0	.288 (-10.824)	-76.0	.316 (-9.997)
-24.2	.257 (-11.797)	-39.0	.316 (-10.008)	-77.0	.301 (-10.415)
-24.4	.248 (-12.113)	-40.0	.342 (-9.31)	-78.0	.286 (-10.859)
-24.6	.239 (-12.441)	-41.0	.367 (-8.709)	-79.0	.271 (-11.332)
-24.8	.23 (-12.781)	-42.0	.39 (-8.189)	-80.0	.256 (-11.835)
-25.0	.22 (-13.135)	-43.0	.41 (-7.738)	-81.0	.241 (-12.374)
-25.2	.211 (-13.503)	-44.0	.429 (-7.349)	-82.0	.225 (-12.951)
-25.4	.202 (-13.887)	-45.0	.446 (-7.013)	-83.0	.21 (-13.571)
-25.6	.193 (-14.287)	-46.0	.461 (-6.724)	-84.0	.194 (-14.242)
-25.8	.184 (-14.706)	-47.0	.474 (-6.479)	-85.0	.178 (-14.971)
-26.0	.175 (-15.145)	-48.0	.486 (-6.272)	-86.0	.163 (-15.768)
-26.2	.166 (-15.606)	-49.0	.495 (-6.101)	-87.0	.147 (-16.648)
-26.4	.157 (-16.092)	-50.0	.503 (-5.963)	-88.0	.131 (-17.627)
-26.6	.148 (-16.605)	-51.0	.51 (-5.855)	-89.0	.116 (-18.733)
-26.8	.139 (-17.149)	-52.0	.514 (-5.775)	-90.0	.10 (-20)
-27.0	.13 (-17.727)	-53.0	.517 (-5.722)	90.0	.00 (-50)

Systems With Reliability

Page 3 of 3

CLIENT:

Date: 11/28/2016

ANTENNA TYPE: FMxx/2

FREQUENCY: 98.1 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%) : 0, 0, 0