

# Technical Report Supporting a New NCE-FM Construction Permit Application

Pursuant to 47 C.F.R. Section 73:

---

*for*  
*Florence, South Carolina*  
*CH206C3 (89.1 MHz)*  
*(Facility ID: 762240)*

*as filed by*  
*Bible Broadcasting Network, Inc.*

---

*This Application is being filed in response to*  
***PUBLIC NOTICE: DA 21-885**; issued*  
*July 23, 2021; “Media Bureau announces NCE-FM*  
*new station filing procedures and requirements for*  
*November 2 - 9, 2021, window”.*

---

---

# ***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 Longley-Rice Method *(for illustrative purposes only)*

Exhibit 3 - Copy of Existing Antenna Structure Registration

Exhibit 4 - Vertical Plan of Antenna System and Support Tower

Exhibit 5 - HAAT Calculation & Miscellaneous Coordinate Information

Exhibit 6 - Tabulation of Proposed Non-Commercial Allocation

Exhibit(s) 7(a-b) - §73.509 Contour Protection Studies Toward Select Station(s)

## **Supplemental Appendixes:**

RF Appendix 1 - Radio Frequency Radiation Compliance Showing

**EXPLANATION OF PROPOSAL:** This New NCE-FM Construction Permit Application and accompanying Technical Report supports a request for a new noncommercial FM (NCE-FM) station pursuant to ***PUBLIC NOTICE: DA 21-885***; issued July 23, 2021; “Media Bureau announces NCE-FM new station filing procedures and requirements for November 2 - 9, 2021, window”. This FCC Schedule 340-NCE-FM filing requests a new facility for CH206C3(89.1 MHz) - Florence, SC with operating parameters of 8.5 kW ERP (Circular Polarization) utilizing a non-directional antenna.

**FACILITY COMPLIANCE SHOWINGS:** A map of the proposed 60 dBμ service contour has been included in ***Exhibit 1***. This exhibit demonstrates NCE-FM grade service of 1.0 mV/m, or 60 dBμ F(50:50), to the entire community of license.

A Longley-Rice coverage map of the proposed operation has been plotted in ***Exhibit 2***. The applicant acknowledges this map has been provided for illustrative purposes only.

The proposed facility will be located on the tower bearing Antenna Structure Registration Number 1049550. In support of this filing, a copy of the current ASRN has been included in ***Exhibit 3***. 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 certifies it has reasonable assurance in good faith that the above structure will be available to the applicant for the applicant’s intended purpose. As this reasonable assurance is not based on the applicant’s ownership of the structure, the applicant certifies that it has obtained such reasonable assurance by contacting the owner or person possessing control of the site or structure. The name of the person contacted, the person’s telephone number, and status of the contact as the tower owner, agent, or authorized representative is as follows:*

<b>Name:</b>	Tiffany Yu (American Tower)
<b>Contact Telephone Number:</b>	(781) 926-7280
<b>Contact Status:</b>	Agent

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***.

**ALLOCATION COMPLIANCE SHOWINGS:** The proposed full service NCE-FM site will meet all contour protection requirements of 47 C.F.R. Section 73.509 toward each allocation protection. A tabulation of the proposed NCE-FM allocation is found in ***Exhibit 6***. There are two (2) allocation concerns deemed close enough to require further study. Therefore, maps and/or tabulations of the relevant protected and interference contours toward these concerns have been supplied in ***Exhibit(s) 7(a-b)***. It is believed sufficient clearance exists precluding the need for further study. However, additional tabulations or maps will be supplied upon request.

The transmitter site is located more than 320 km from the common border of the United States and Canada or Mexico. As a result, full protection will be afforded all international concerns as noted in the **Exhibit 6** allocation study.

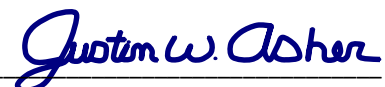
The transmitter site is located within the affected radius of multiple TV6 facilities. However, full protection will be afforded all TV6 concerns as noted in **Exhibit 6**.

The remainder of this report is responsive to the Rules of the Commission, and provides the data for the FCC's online master LMS (Licensing and Management System) form.

**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 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.

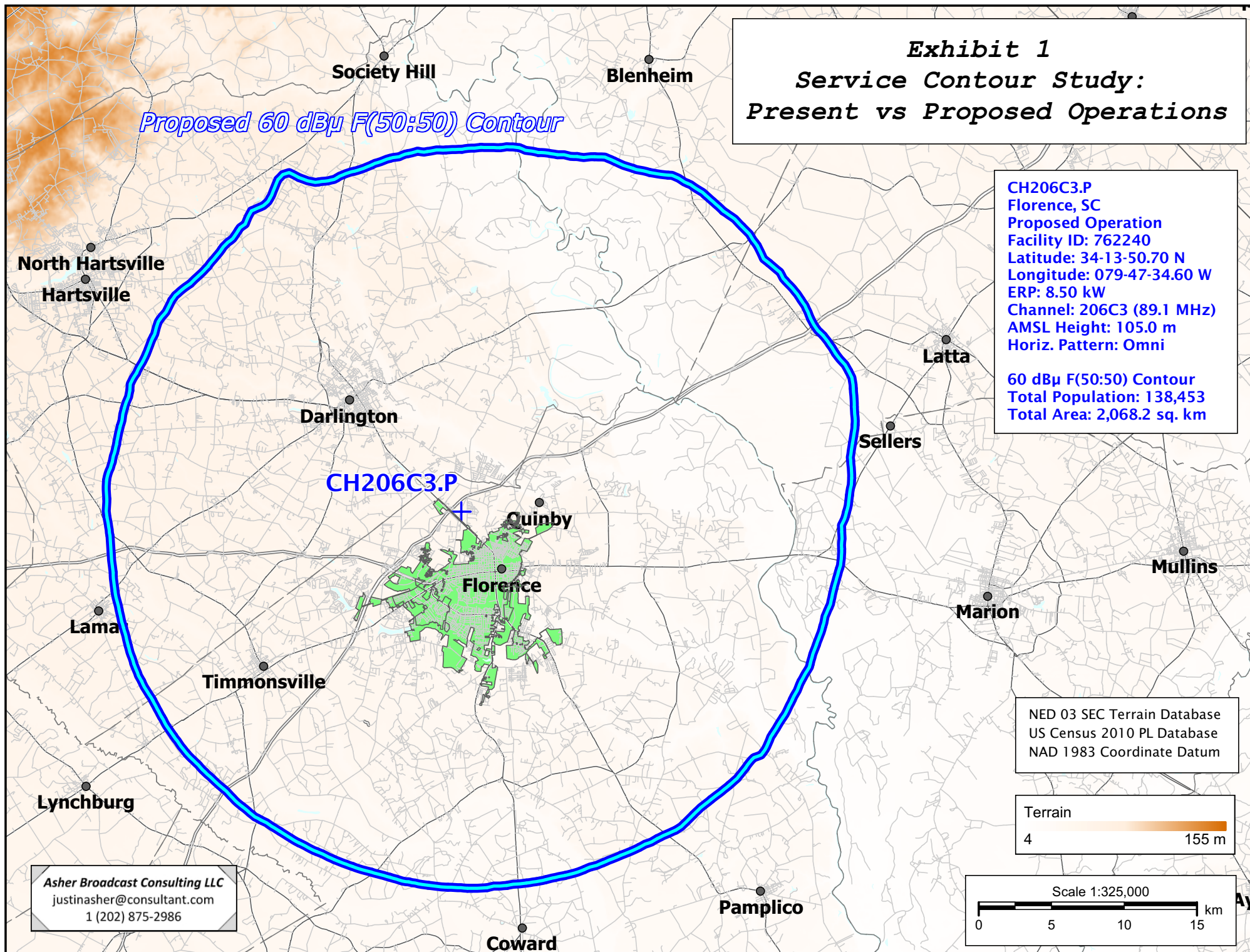
Regarding compliance with the NEPA, Nationwide Programmatic Agreement and NHPA Section 106 for tower co-location, compliance with the Agreement is not required where no new tower construction is being proposed and the tower is not being substantially altered. Specifically, compliance is not necessary where only an antenna and feedline are being added to an existing structure. 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 twenty-two 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  
October 19, 2021

**Exhibit 1**  
**Service Contour Study:**  
**Present vs Proposed Operations**



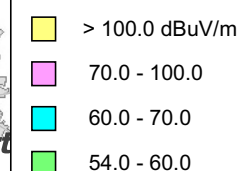


non-FCC-sanctioned coverage map  
for illustrative purposes only

NED 03 SEC Terrain Database  
US Census 2010 PL Database  
NAD 1983 Coordinate Datum

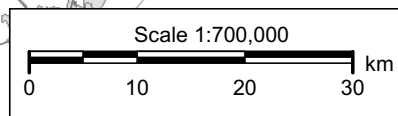
## Exhibit 2

### Service Contour Study: Proposed Longley-Rice Method



**CH206C3.P**  
Florence, SC  
Proposed Operation  
Facility ID: 762240  
Latitude: 34-13-50.70 N  
Longitude: 079-47-34.60 W  
ERP: 8.50 kW  
Channel: 206C3 (89.1 MHz)  
AMSL Height: 105.0 m  
Horiz. Pattern: Omni  
Prop Model: Longley-Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 311.0  
Receiver Ht AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 50.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast

60 dBμ Longley-Rice Contour  
Total Population: 223,905



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

V-Soft Communications LLC ©

# Exhibit 3

## Copy of Existing Antenna Structure Registration

(public record copy)

### Registration Detail

Reg Number	1049550	Status	Constructed
File Number	A1037113	Constructed	08/11/1986
EMI	No	Dismantled	
NEPA	No		

### Antenna Structure

#### Structure Type

#### Location (In NAD83 Coordinates)

Lat/Long	34-13-50.7 N 079-47-34.6 W	Address	1770 NORTH CASHUA DRIVE (88684 / FLORENCE)
City, State	FLORENCE , SC	County	FLORENCE
Zip	29501	Position of Tower in Array	
Center of AM Array			

#### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
42.4	89.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
131.4	81.0

#### Painting and Lighting Specifications

FAA Chapters 4, 8, 12  
Paint and Light in Accordance with FAA Circular Number 70/7460-1K

#### FAA Notification

FAA Study	2004-ASO-2239-OE	FAA Issue Date	05/14/2004
-----------	------------------	----------------	------------

#### Owner & Contact Information

FRN	0011498342	Owner Entity Type	Limited Liability Company
-----	------------	-------------------	---------------------------

#### Owner

American Towers LLC  
Attention To: FAA/FCC Regulatory Team  
10 Presidential Way  
Woburn , MA 01801

P: (781)926-4500  
F:  
E: faa-fcc@americantower.com

#### Contact

Attention To: FAA/FCC Regulatory Team  
10 Presidential Way  
Woburn , MA 01801

P: (781)926-4500  
F:  
E: faa-fcc@americantower.com

#### Last Action Status

Status	Constructed	Received	06/23/2016
Purpose	Admin Update	Entered	06/23/2016
Mode	Interactive		

#### Related Applications

06/23/2016 A1037113 - Admin Update (AU)  
08/04/2008 A0602168 - Admin Update (AU)  
05/11/2006 A0503725 - Admin Update (AU)

Related applications (13)

#### Comments

##### Comments

None

#### History

Date	Event
06/24/2016	Registration Printed
06/23/2016	ASR Application receipt email sent: Tower email
06/23/2016	Administrative Update Received
All History (33)	

#### Pleadings

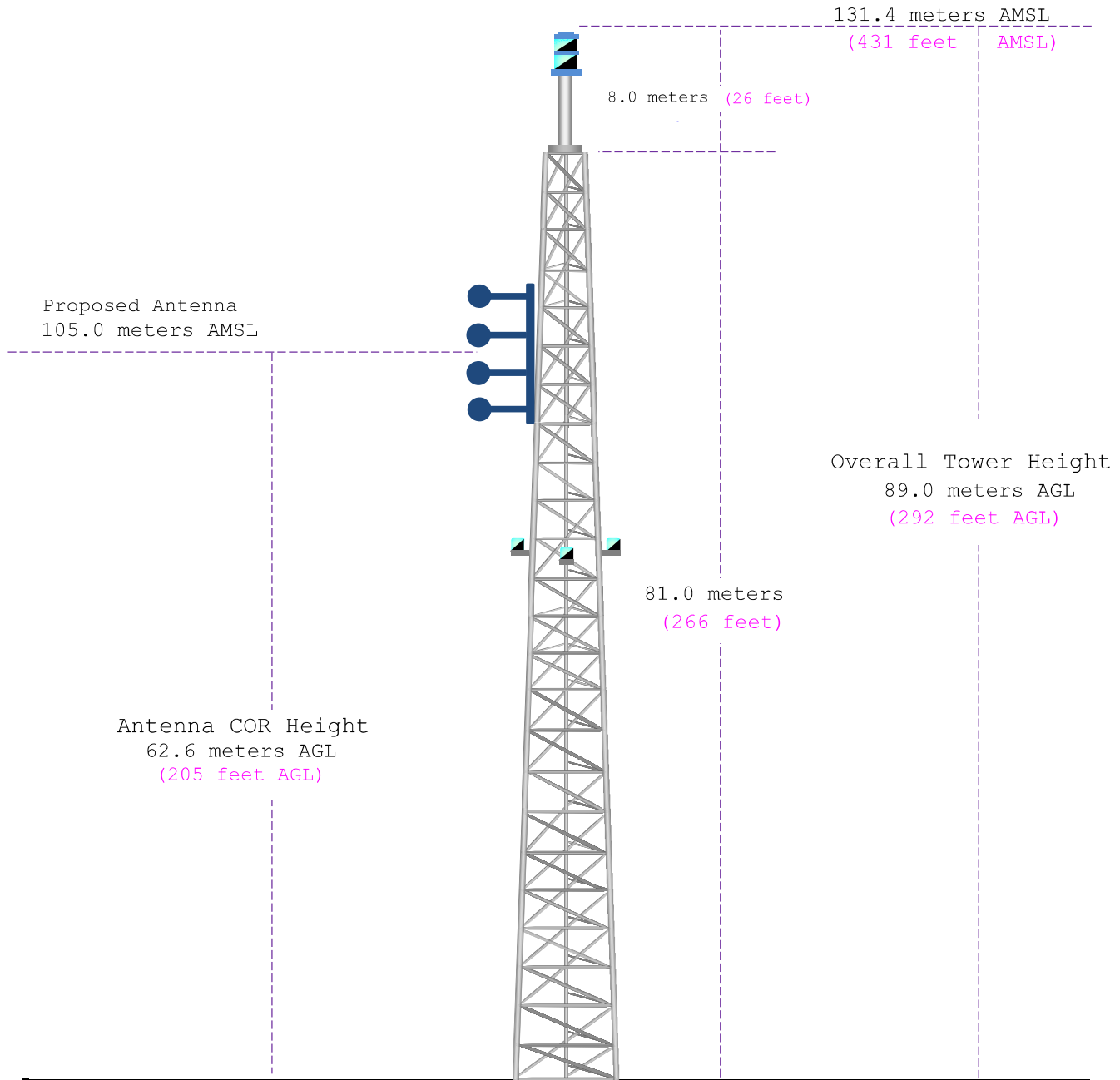
Pleading Type	Filer Name	Description	Date Entered
None			

#### Automated Letters

05/12/2006 Authorization, Reference 503418  
12/08/2004 Authorization, Reference 384672  
09/21/2004 Ownership Change, Reference 359698  
All letters (14)

# Exhibit 4

## Vertical Plan of Antenna System and Support Tower



<b>Ground Elevation:</b> 42.4 meters AMSL (139 feet AMSL)		
<b>Address:</b> 1770 North Cashua Drive		
<b>City:</b> Florence	<b>Latitude (D M S)</b>	<b>Longitude (D M S)</b>
<b>County:</b> Florence	---	---
<b>State:</b> South Carolina	(NAD 1927)	
	<b>Lat/Long:</b> 34-13-50.7 N 079-47-34.6 W (NAD 1983)	
<b>Antenna Structure Registration</b>	<b>Asher Broadcast Consulting, LLC</b>	
1049550	Drawing Is Not To Scale	justinasher@consultant.com 1(202)875-2986



## ***Exhibit 5***

### **HAAT and Miscellaneous Coordinate Information**

#### **HAAT Calculation (NAD 1983):**

N. Lat. = 341350.7    W. Lng. = 794734.6  
 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	41.6	63.4	8.5000	9.29	1.000	24.88
045	25.5	79.5	8.5000	9.29	1.000	27.46
090	31.9	73.1	8.5000	9.29	1.000	26.44
135	32.7	72.3	8.5000	9.29	1.000	26.30
180	35.8	69.2	8.5000	9.29	1.000	25.82
225	40.2	64.8	8.5000	9.29	1.000	25.09
270	44.6	60.4	8.5000	9.29	1.000	24.38
315	45.3	59.7	8.5000	9.29	1.000	24.26

Ave El= 37.20 M    HAAT= 67.80 M    AMSL= 105.0

#### **NAD 1983 to NAD 1927 Conversion:**

#### **Various Coordinate Conversion Calculations (NAD 1983):**

<b>Position Type</b>	Lat Lon
<b>Degrees Lat Long</b>	34.2307500°, -079.7929444°
<b>Degrees Minutes</b>	34°13.84500', -079°47.57667'
<b>Degrees Minutes Seconds</b>	34°13'50.7000", -079°47'34.6000"
<b>UTM</b>	17S 611169mE 3788400mN
<b>UTM centimeter</b>	17S 611169.69mE 3788400.34mN
<b>MGRS</b>	17SPT1116988400
<b>Grid North</b>	0.7°
<b>GARS</b>	201LJ33
<b>Maidenhead</b>	FM04CF45UJ31
<b>GEOREF</b>	GJLE12421384

# ***Exhibit 6***

## **Tabulation of Proposed Allocation**

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

Bible Broadcasting Network, Inc.											
REFERENCE	CH#	206C3 - 89.1 MHz, Pwr= 8.5 kW, HAAT= 67.8 M, COR= 105 M								DISPLAY DATES	
34 13 50.70 N.		Average Protected F(50-50)= 25.58 km								DATA	10-19-21
79 47 34.60 W.		Omni-directional								SEARCH	10-19-21
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)
207C	WSCI	LIC	DCN	176.6	145.47	32 55 28.60	100.000	119.4	80.5	0.2	24.8
Charleston		SC		356.6	BMLED20161028AAW	79 41 57.30	418	419	South Carolina Educational		
209C	WMHK	LIC	DCN	260.8	90.55	34 05 49.50	100.000	12.1	83.4	54.1	4.7
Columbia		SC		80.3	BLED19940323KA	80 45 50.30	426	507	Educational Media Foundati		
06 --	W06DK-D«	LI	DHN	164.1	38.65	33 53 47.00	3.000	22.5	10.8	33.3R	5.3M
Florence		SC		344.1	0000158692	79 40 40.70		35			
06 --	W06DK-D«	APP	DHN	164.1	38.65	33 53 47.00	3.000	22.5	10.8	33.3R	5.3M
Florence		SC		344.1	0000159759	79 40 40.70		35			
205C1	WKVC	LIC	DCN	96.7	122.28	34 05 41.60	100.000	89.6	59.9	6.8	21.3
North Myrtle Beach		SC		277.5	BLED20141209ABG	78 28 26.00	174	186	Educational Media Foundati		
207C1	WRFE	LIC	DEN	336.2	81.69	34 54 10.00	50.000	45.5	29.4	10.3	9.4
Chesterfield		SC		156.0	BLED20180301AAI	80 09 13.60	189	303	Positive Alternative Radio		
205C1	WNSC-FM	LIC	_CN	301.5	131.08	34 50 23.50	100.000	93.0	62.6	13.5	30.7
Rock Hill		SC		120.8	BMLED20060215AAK	81 01 06.30	183	359	South Carolina Educational		
208A	WLPS-FM	LIC	DVN	50.0	81.63	34 42 02.60	2.000	2.2	25.0	52.1	54.0
Lumberton		NC		230.4	BLED20060321AFM	79 06 31.10	134	179	Billy Ray Locklear Evangel		
206C1	WLJK	LIC	_HN	244.6	209.96	33 24 18.50	10.000	132.1	55.3	53.0	69.0
Aiken		SC		63.5	BLED19890814KA	81 50 14.40	419	498	South Carolina Educational		
205C1	WZLC	LIC	DEN	211.9	135.66	33 11 33.60	70.000	54.1	33.8	56.9	58.6
Summerville		SC		31.5	BLED20140106DWC	80 33 50.40	96	124	Radio Training Network, In		
204C3	WRAE	LIC	DCN	38.6	97.73	34 54 57.60	6.000	2.1	24.7	68.2	69.4
Raeford		NC		219.0	BLED20110201ADE	79 07 27.10	144	207	American Family Associatio		
207A	WZRI	LIC	DVN	35.8	129.19	35 10 14.60	2.000	18.7	12.4	83.3	72.6
Spring Lake		NC		216.2	BLED20050509ACO	78 57 43.10	55	116	Educational Media Foundati		
203C2	WYFV	LIC	DCN	253.8	125.48	33 54 32.60	50.000	4.1	39.5	96.9	82.8
Cayce		SC		73.1	BLED20060310ACX	81 05 56.30	52	132	Bible Broadcasting Network		

-----  
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.  
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.

## ***Exhibit 7a***

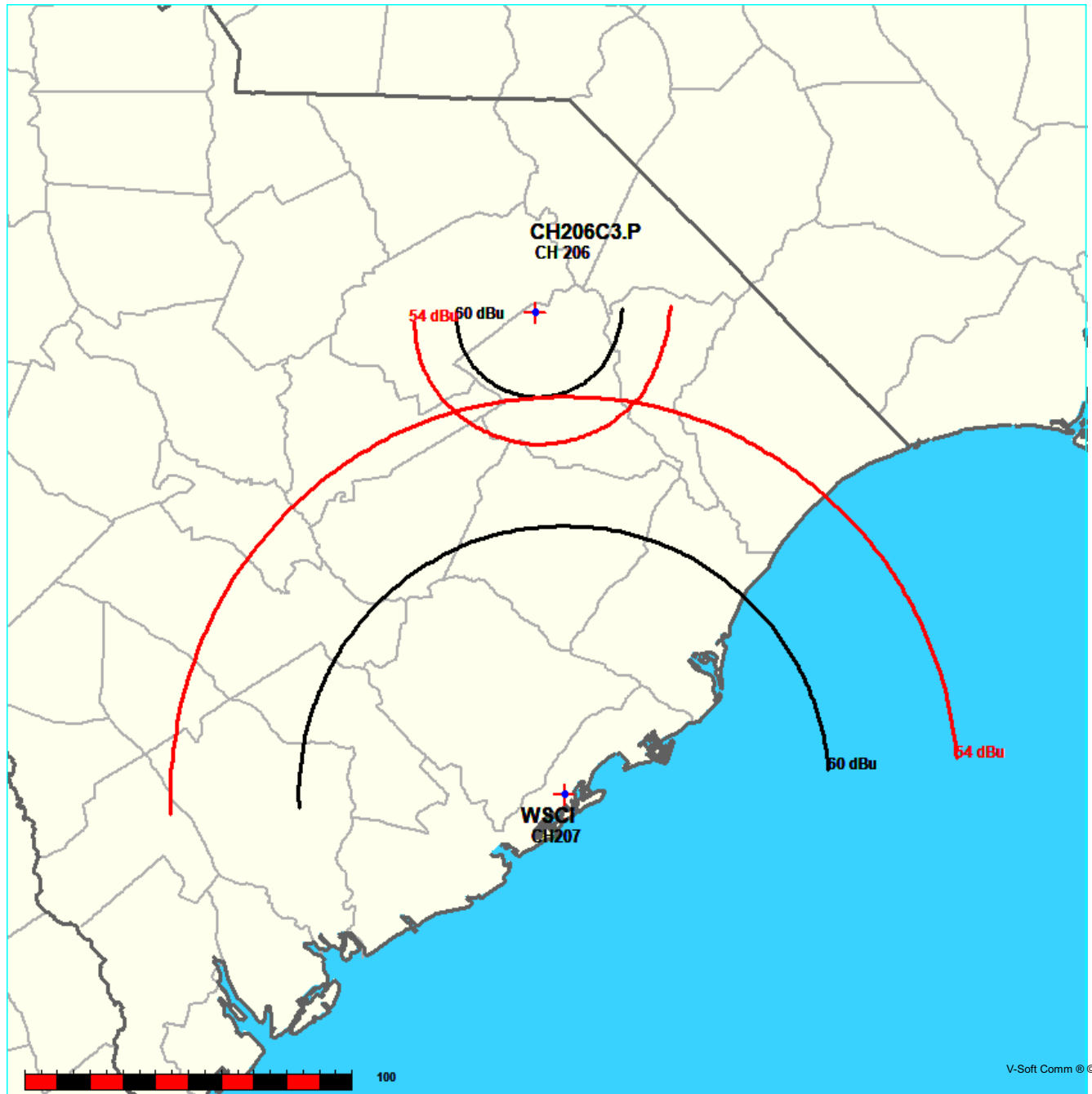
### ***Contour Protection Studies Toward Select Allocation Concern(s)***

Bible Broadcasting Network, Inc.

FMCommander Single Allocation Study - 10-19-2021 - NED 03 SEC  
CH206C3.P's Overlaps (In= 0.18 km, Out= 24.85 km)

CH206C3.P CH 206 C3  
Lat= 34 13 50.70, Lng= 79 47 34.60  
8.5 kW 67.8 m HAAT, 105 m COR  
Prot.= 60 dBu, Intef.= 54 dBu

WSCI CH 207 C DA BMLED20161028AAW  
Lat= 32 55 28.60, Lng= 79 41 57.30  
100.0 kW 418 m HAAT, 419 m COR  
Prot.= 60 dBu, Intef.= 54 dBu



# ***Exhibit 7a***

## **Contour Protection Studies Toward Select Allocation Concern(s)**

10-19-2021

Terrain Data: NED 03 SEC

FMOver Analysis

CH206C3.P

WSCI BMLED20161028AAW

Channel = 206C3  
 Max ERP = 8.5 kW  
 RCAMSL = 105 m  
 N. Lat. 34 13 50.70  
 W. Lng. 79 47 34.60  
 Protected  
 60 dBu

Channel = 207C  
 Max ERP = 100 kW  
 RCAMSL = 419 m  
 N. Lat. 32 55 28.60  
 W. Lng. 79 41 57.30  
 Interfering  
 54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
136.0	008.5000	0072.1	026.3	004.4	100.0000	0410.9	126.7	52.20	
137.0	008.5000	0071.8	026.2	004.2	100.0000	0410.9	126.4	52.28	
138.0	008.5000	0071.5	026.2	004.0	100.0000	0410.8	126.1	52.35	
139.0	008.5000	0071.3	026.2	003.9	100.0000	0410.8	125.8	52.42	
140.0	008.5000	0071.3	026.2	003.7	100.0000	0410.7	125.4	52.50	
141.0	008.5000	0071.2	026.1	003.6	100.0000	0410.6	125.1	52.57	
142.0	008.5000	0071.5	026.2	003.4	100.0000	0410.5	124.8	52.66	
143.0	008.5000	0071.9	026.2	003.3	100.0000	0410.4	124.5	52.74	
144.0	008.5000	0072.3	026.3	003.2	100.0000	0410.3	124.1	52.83	
145.0	008.5000	0072.7	026.4	003.0	100.0000	0410.3	123.8	52.91	
146.0	008.5000	0072.6	026.4	002.8	100.0000	0410.2	123.5	52.98	
147.0	008.5000	0072.1	026.3	002.6	100.0000	0410.1	123.3	53.03	
148.0	008.5000	0071.6	026.2	002.4	100.0000	0410.1	123.1	53.08	
149.0	008.5000	0071.4	026.2	002.3	100.0000	0410.0	122.9	53.13	
150.0	008.5000	0071.4	026.2	002.1	100.0000	0409.9	122.6	53.19	
151.0	008.5000	0070.9	026.1	001.9	100.0000	0409.9	122.5	53.24	
152.0	008.5000	0070.9	026.1	001.7	100.0000	0409.9	122.2	53.29	
153.0	008.5000	0070.8	026.1	001.5	100.0000	0409.8	122.0	53.35	
154.0	008.5000	0070.7	026.0	001.3	100.0000	0409.8	121.8	53.39	
155.0	008.5000	0070.5	026.0	001.1	100.0000	0409.7	121.7	53.44	
156.0	008.5000	0070.4	026.0	000.9	100.0000	0409.7	121.5	53.48	
157.0	008.5000	0070.3	026.0	000.7	100.0000	0409.9	121.3	53.53	
158.0	008.5000	0070.3	026.0	000.5	100.0000	0409.9	121.1	53.58	
159.0	008.5000	0070.4	026.0	000.3	100.0000	0409.9	120.9	53.62	
160.0	008.5000	0070.1	025.9	000.1	100.0000	0409.9	120.8	53.65	
161.0	008.5000	0070.2	026.0	359.9	100.0000	0409.9	120.7	53.70	
162.0	008.5000	0070.4	026.0	359.7	100.0000	0409.9	120.5	53.74	
163.0	008.5000	0070.4	026.0	359.5	100.0000	0409.9	120.4	53.77	
164.0	008.5000	0070.2	026.0	359.3	100.0000	0409.9	120.3	53.80	
165.0	008.5000	0070.0	025.9	359.1	100.0000	0409.9	120.2	53.82	
166.0	008.5000	0069.9	025.9	358.9	100.0000	0409.9	120.1	53.84	
167.0	008.5000	0069.9	025.9	358.7	100.0000	0409.9	120.0	53.86	

## 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)
168.0	008.5000	0069.9	025.9	358.4	100.0000	0409.8	119.9	53.88
169.0	008.5000	0069.8	025.9	358.2	100.0000	0409.8	119.8	53.90
170.0	008.5000	0069.7	025.9	358.0	100.0000	0409.9	119.8	53.91
171.0	008.5000	0069.5	025.9	357.8	100.0000	0409.9	119.8	53.92
172.0	008.5000	0069.4	025.8	357.6	100.0000	0409.8	119.7	53.93
173.0	008.5000	0069.5	025.9	357.4	100.0000	0409.7	119.7	53.94
174.0	008.5000	0069.4	025.8	357.2	100.0000	0409.7	119.7	53.94
175.0	008.5000	0069.2	025.8	356.9	100.0000	0409.6	119.7	53.93
176.0	008.5000	0069.6	025.9	356.7	100.0000	0409.5	119.6	53.95
177.0	008.5000	0069.7	025.9	356.5	100.0000	0409.5	119.6	53.95
178.0	008.5000	0069.5	025.9	356.3	100.0000	0409.5	119.6	53.95
179.0	008.5000	0069.5	025.9	356.1	100.0000	0409.5	119.6	53.94
180.0	008.5000	0069.2	025.8	355.9	100.0000	0409.4	119.7	53.92
181.0	008.5000	0069.2	025.8	355.6	100.0000	0409.4	119.8	53.91
182.0	008.5000	0069.2	025.8	355.4	100.0000	0409.4	119.8	53.90
183.0	008.5000	0069.1	025.8	355.2	100.0000	0409.4	119.9	53.88
184.0	008.5000	0069.0	025.8	355.0	100.0000	0409.3	120.0	53.85
185.0	008.5000	0068.9	025.8	354.8	100.0000	0409.3	120.1	53.83
186.0	008.5000	0068.8	025.7	354.6	100.0000	0409.3	120.2	53.81
187.0	008.5000	0068.5	025.7	354.4	100.0000	0409.3	120.3	53.77
188.0	008.5000	0068.4	025.7	354.2	100.0000	0409.4	120.4	53.74
189.0	008.5000	0068.5	025.7	354.0	100.0000	0409.5	120.5	53.72
190.0	008.5000	0068.0	025.6	353.8	100.0000	0409.5	120.7	53.67
191.0	008.5000	0067.8	025.6	353.6	100.0000	0409.5	120.9	53.63
192.0	008.5000	0067.6	025.5	353.4	100.0000	0409.6	121.0	53.59
193.0	008.5000	0067.5	025.5	353.2	100.0000	0409.7	121.2	53.55
194.0	008.5000	0067.3	025.5	353.0	100.0000	0409.8	121.4	53.51
195.0	008.5000	0067.3	025.5	352.8	100.0000	0410.0	121.5	53.47
196.0	008.5000	0067.3	025.5	352.6	100.0000	0410.0	121.7	53.43
197.0	008.5000	0067.2	025.5	352.4	100.0000	0410.0	121.9	53.37
198.0	008.5000	0067.1	025.5	352.2	100.0000	0409.9	122.1	53.32
199.0	008.5000	0067.0	025.5	352.0	100.0000	0409.9	122.3	53.27
200.0	008.5000	0066.8	025.4	351.9	100.0000	0409.9	122.6	53.21
201.0	008.5000	0066.7	025.4	351.7	100.0000	0409.9	122.8	53.15
202.0	008.5000	0066.4	025.4	351.5	100.0000	0410.0	123.1	53.09
203.0	008.5000	0066.5	025.4	351.3	100.0000	0410.1	123.3	53.03
204.0	008.5000	0066.4	025.4	351.2	100.0000	0410.2	123.5	52.97
205.0	008.5000	0066.2	025.3	351.0	100.0000	0410.3	123.8	52.91
206.0	008.5000	0066.2	025.3	350.8	100.0000	0410.4	124.0	52.85
207.0	008.5000	0066.1	025.3	350.7	100.0000	0410.5	124.3	52.78
208.0	008.5000	0065.9	025.3	350.5	100.0000	0410.6	124.6	52.71
209.0	008.5000	0065.7	025.2	350.4	100.0000	0410.6	124.9	52.64
210.0	008.5000	0065.6	025.2	350.2	100.0000	0410.7	125.2	52.56
211.0	008.5000	0065.6	025.2	350.1	100.0000	0410.7	125.5	52.49
212.0	008.5000	0065.5	025.2	349.9	100.0000	0410.7	125.8	52.41
213.0	008.5000	0065.7	025.3	349.8	100.0000	0410.7	126.1	52.35



# ***Exhibit 7a***

## **Contour Protection Studies Toward Select Allocation Concern(s)**

10-19-2021      Terrain Data: NED 03 SEC      FMOver Analysis

WSCI    BMLD20161028AAW

CH206C3.P

Channel = 207C  
 Max ERP = 100 kW  
 RCAMSL = 419 m  
 N. Lat. 32 55 28.60  
 W. Lng. 79 41 57.30  
 Protected  
     60 dBu

Channel = 206C3  
 Max ERP = 8.5 kW  
 RCAMSL = 105 m  
 N. Lat. 34 13 50.70  
 W. Lng. 79 47 34.60  
 Interfering  
     54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
312.0	100.0000	0411.6	080.6	209.3	008.5000	0065.7	104.7	35.83	
313.0	100.0000	0411.7	080.6	209.1	008.5000	0065.7	103.3	36.10	
314.0	100.0000	0412.0	080.6	208.9	008.5000	0065.7	102.0	36.37	
315.0	100.0000	0411.4	080.6	208.7	008.5000	0065.8	100.6	36.64	
316.0	100.0000	0411.3	080.6	208.4	008.5000	0065.8	099.3	36.92	
317.0	100.0000	0411.4	080.6	208.2	008.5000	0065.8	097.9	37.20	
318.0	100.0000	0411.8	080.6	207.9	008.5000	0065.9	096.6	37.49	
319.0	100.0000	0411.4	080.6	207.6	008.5000	0066.0	095.3	37.79	
320.0	100.0000	0411.5	080.6	207.3	008.5000	0066.0	094.0	38.09	
321.0	100.0000	0411.6	080.6	207.0	008.5000	0066.1	092.7	38.40	
322.0	100.0000	0411.5	080.6	206.6	008.5000	0066.2	091.4	38.71	
323.0	100.0000	0411.6	080.6	206.2	008.5000	0066.2	090.1	39.02	
324.0	100.0000	0411.6	080.6	205.8	008.5000	0066.2	088.9	39.33	
325.0	100.0000	0411.7	080.6	205.4	008.5000	0066.2	087.7	39.65	
326.0	100.0000	0411.7	080.6	204.9	008.5000	0066.2	086.4	39.95	
327.0	100.0000	0411.8	080.6	204.4	008.5000	0066.4	085.2	40.27	
328.0	100.0000	0411.6	080.6	203.9	008.5000	0066.4	084.1	40.57	
329.0	100.0000	0411.7	080.6	203.3	008.5000	0066.5	082.9	40.87	
330.0	100.0000	0411.6	080.6	202.7	008.5000	0066.5	081.8	41.16	
331.0	100.0000	0411.7	080.6	202.1	008.5000	0066.4	080.7	41.44	
332.0	100.0000	0411.9	080.6	201.5	008.5000	0066.5	079.6	41.72	
333.0	100.0000	0412.2	080.7	200.8	008.5000	0066.7	078.5	42.01	
334.0	100.0000	0412.8	080.7	200.2	008.5000	0066.8	077.5	42.28	
335.0	100.0000	0412.7	080.7	199.4	008.5000	0066.9	076.5	42.55	
336.0	100.0000	0412.4	080.7	198.6	008.5000	0067.0	075.5	42.80	
337.0	100.0000	0412.6	080.7	197.9	008.5000	0067.1	074.6	43.05	
338.0	100.0000	0412.9	080.7	197.0	008.5000	0067.2	073.6	43.29	
339.0	100.0000	0413.0	080.7	196.2	008.5000	0067.3	072.8	43.53	
340.0	100.0000	0412.4	080.7	195.2	008.5000	0067.3	072.0	43.74	
341.0	100.0000	0412.1	080.7	194.3	008.5000	0067.4	071.2	43.95	
342.0	100.0000	0411.9	080.6	193.3	008.5000	0067.4	070.4	44.14	
343.0	100.0000	0411.8	080.6	192.3	008.5000	0067.5	069.7	44.34	
344.0	100.0000	0411.5	080.6	191.3	008.5000	0067.7	069.1	44.52	

## ***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)
345.0	100.0000	0411.5	080.6	190.3	008.5000	0067.9	068.5	44.70
346.0	100.0000	0411.4	080.6	189.2	008.5000	0068.4	067.9	44.89
347.0	100.0000	0411.0	080.6	188.1	008.5000	0068.4	067.4	45.02
348.0	100.0000	0411.0	080.6	186.9	008.5000	0068.5	066.9	45.16
349.0	100.0000	0411.0	080.6	185.8	008.5000	0068.8	066.5	45.29
350.0	100.0000	0410.7	080.5	184.6	008.5000	0068.9	066.1	45.40
351.0	100.0000	0410.3	080.5	183.4	008.5000	0069.1	065.8	45.49
352.0	100.0000	0409.9	080.5	182.2	008.5000	0069.1	065.6	45.56
353.0	100.0000	0409.8	080.5	181.0	008.5000	0069.2	065.3	45.62
354.0	100.0000	0409.4	080.5	179.8	008.5000	0069.3	065.2	45.67
355.0	100.0000	0409.3	080.4	178.5	008.5000	0069.6	065.1	45.72
356.0	100.0000	0409.4	080.5	177.3	008.5000	0069.6	065.0	45.74
357.0	100.0000	0409.6	080.5	176.1	008.5000	0069.6	065.0	45.75
358.0	100.0000	0409.9	080.5	174.8	008.5000	0069.1	065.0	45.70
359.0	100.0000	0409.9	080.5	173.6	008.5000	0069.4	065.1	45.70
000.0	100.0000	0409.9	080.5	172.4	008.5000	0069.4	065.3	45.65
001.0	100.0000	0409.7	080.5	171.2	008.5000	0069.5	065.5	45.60
002.0	100.0000	0409.9	080.5	169.9	008.5000	0069.7	065.8	45.54
003.0	100.0000	0410.3	080.5	168.8	008.5000	0069.8	066.1	45.47
004.0	100.0000	0410.8	080.6	167.6	008.5000	0069.9	066.4	45.39
005.0	100.0000	0411.2	080.6	166.4	008.5000	0069.9	066.8	45.28
006.0	100.0000	0411.6	080.6	165.3	008.5000	0070.0	067.2	45.17
007.0	100.0000	0411.9	080.6	164.2	008.5000	0070.2	067.7	45.05
008.0	100.0000	0412.0	080.6	163.1	008.5000	0070.3	068.3	44.90
009.0	100.0000	0412.3	080.7	162.0	008.5000	0070.4	068.9	44.75
010.0	100.0000	0412.3	080.7	161.0	008.5000	0070.2	069.6	44.56
011.0	100.0000	0412.5	080.7	160.0	008.5000	0070.1	070.2	44.37
012.0	100.0000	0412.8	080.7	159.0	008.5000	0070.4	071.0	44.19
013.0	100.0000	0412.9	080.7	158.0	008.5000	0070.3	071.8	43.98
014.0	100.0000	0413.0	080.7	157.1	008.5000	0070.3	072.6	43.76
015.0	100.0000	0413.1	080.7	156.3	008.5000	0070.3	073.4	43.54
016.0	100.0000	0413.3	080.7	155.4	008.5000	0070.5	074.3	43.31
017.0	100.0000	0413.2	080.7	154.6	008.5000	0070.5	075.3	43.07
018.0	100.0000	0413.3	080.7	153.8	008.5000	0070.7	076.2	42.83
019.0	100.0000	0413.5	080.8	153.1	008.5000	0070.8	077.2	42.58
020.0	100.0000	0413.8	080.8	152.3	008.5000	0071.0	078.2	42.32
021.0	100.0000	0413.9	080.8	151.7	008.5000	0070.9	079.3	42.05
022.0	100.0000	0414.1	080.8	151.0	008.5000	0070.9	080.3	41.77
023.0	100.0000	0414.3	080.8	150.4	008.5000	0071.2	081.4	41.50
024.0	100.0000	0414.6	080.8	149.8	008.5000	0071.5	082.6	41.22
025.0	100.0000	0414.9	080.9	149.2	008.5000	0071.5	083.7	40.92
026.0	100.0000	0415.1	080.9	148.7	008.5000	0071.4	084.9	40.62
027.0	100.0000	0415.0	080.9	148.2	008.5000	0071.6	086.1	40.31
028.0	100.0000	0414.8	080.9	147.7	008.5000	0071.7	087.3	40.00
029.0	100.0000	0414.7	080.8	147.3	008.5000	0072.0	088.5	39.70
030.0	100.0000	0414.4	080.8	146.9	008.5000	0072.2	089.8	39.39

## *Exhibit 7b*

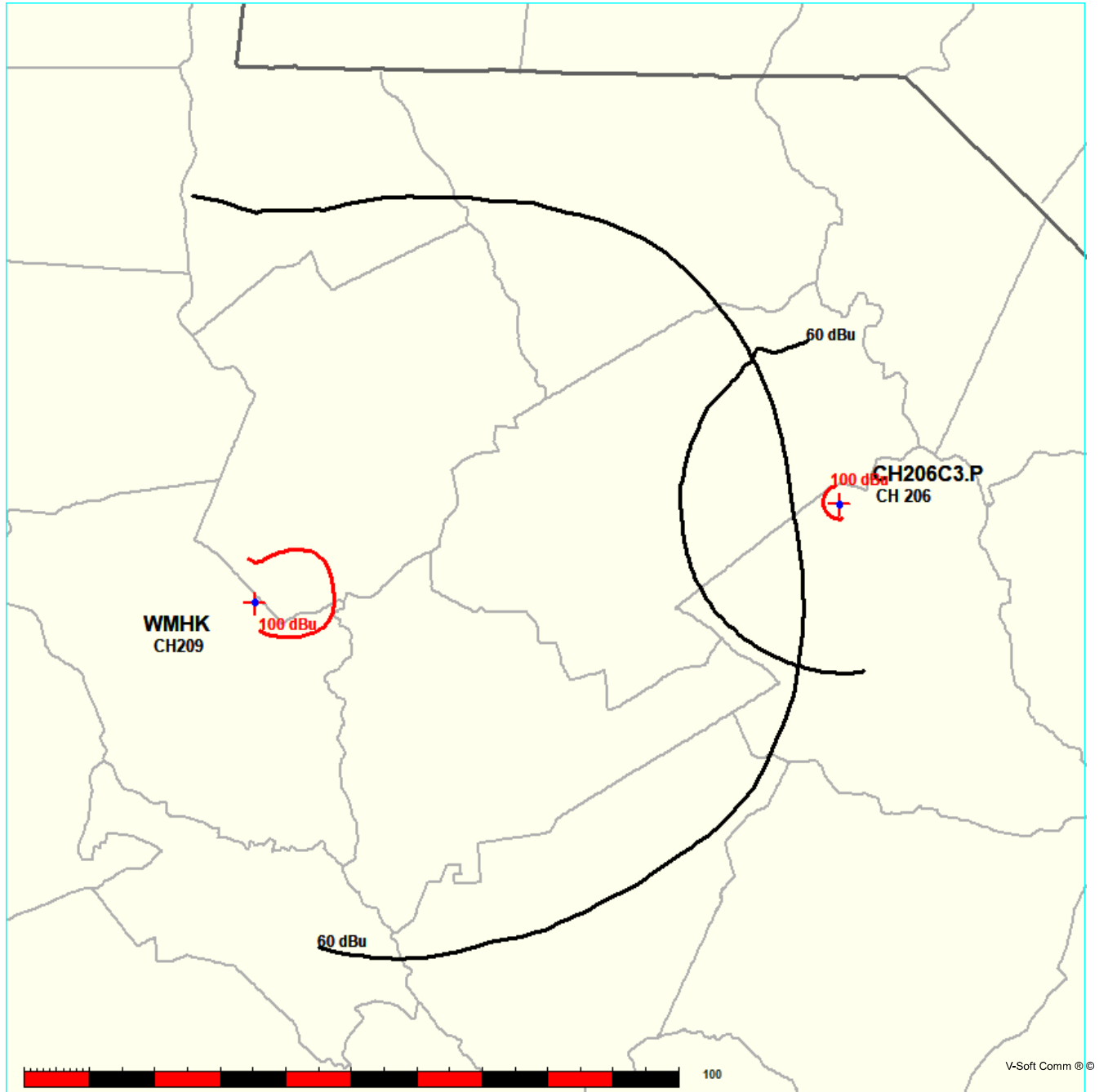
### *Contour Protection Studies Toward Select Allocation Concern(s)*

Bible Broadcasting Network, Inc.

FMCommander Single Allocation Study - 10-19-2021 - NED 03 SEC  
CH206C3.P's Overlaps (In= 54.08 km, Out= 4.69 km)

CH206C3.P CH 206 C3  
Lat= 34 13 50.70, Lng= 79 47 34.60  
8.5 kW 67.8 m HAAT, 105 m COR  
Prot.= 60 dBu, Intef.= 100 dBu

WMHK CH 209 C DA BLED19940323KA  
Lat= 34 05 49.50, Lng= 80 45 50.30  
100.0 kW 426 m HAAT, 507 m COR  
Prot.= 60 dBu, Intef.= 100 dBu



## Exhibit 7b

### Contour Protection Studies Toward Select Allocation Concern(s)

10-19-2021

Terrain Data: NED 03 SEC

FMOver Analysis

CH206C3.P

WMHK BLED19940323KA

Channel = 206C3  
Max ERP = 8.5 kW  
RCAMSL = 105 m  
N. Lat. 34 13 50.70  
W. Lng. 79 47 34.60  
Protected  
60 dBu

Channel = 209C  
Max ERP = 100 kW  
RCAMSL = 507 m  
N. Lat. 34 05 49.50  
W. Lng. 80 45 50.30  
Interfering  
100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
219.0	008.5000	0065.0	025.1	093.4	097.9611	0457.9	073.8	68.81	
220.0	008.5000	0064.6	025.1	093.2	098.1027	0457.7	073.4	68.92	
221.0	008.5000	0064.7	025.1	093.0	098.2200	0457.6	073.1	69.04	
222.0	008.5000	0064.7	025.1	092.8	098.3449	0457.5	072.7	69.16	
223.0	008.5000	0064.7	025.1	092.5	098.4787	0457.4	072.4	69.27	
224.0	008.5000	0064.7	025.1	092.3	098.6108	0457.3	072.1	69.38	
225.0	008.5000	0064.8	025.1	092.1	098.7451	0457.2	071.7	69.50	
226.0	008.5000	0064.7	025.1	091.8	098.8932	0457.1	071.4	69.60	
227.0	008.5000	0064.8	025.1	091.6	099.0319	0457.0	071.1	69.72	
228.0	008.5000	0064.9	025.1	091.4	099.1757	0457.0	070.8	69.83	
229.0	008.5000	0064.9	025.1	091.1	099.3316	0457.0	070.5	69.93	
230.0	008.5000	0064.8	025.1	090.8	099.4950	0456.8	070.2	70.03	
231.0	008.5000	0064.6	025.1	090.6	099.6693	0456.7	069.9	70.12	
232.0	008.5000	0064.6	025.1	090.3	099.8366	0456.5	069.7	70.21	
233.0	008.5000	0064.4	025.0	090.0	100.0000	0456.3	069.4	70.29	
234.0	008.5000	0064.3	025.0	089.7	100.0000	0456.0	069.2	70.37	
235.0	008.5000	0063.9	025.0	089.4	100.0000	0455.6	069.0	70.43	
236.0	008.5000	0063.7	024.9	089.0	100.0000	0455.2	068.7	70.49	
237.0	008.5000	0063.5	024.9	088.7	100.0000	0455.0	068.5	70.55	
238.0	008.5000	0063.3	024.9	088.4	100.0000	0455.0	068.3	70.62	
239.0	008.5000	0063.1	024.8	088.1	100.0000	0455.2	068.1	70.69	
240.0	008.5000	0063.3	024.9	087.8	100.0000	0455.4	067.9	70.77	
241.0	008.5000	0063.4	024.9	087.4	100.0000	0455.4	067.7	70.84	
242.0	008.5000	0063.3	024.8	087.1	100.0000	0455.3	067.5	70.90	
243.0	008.5000	0063.3	024.9	086.8	100.0000	0455.1	067.3	70.96	
244.0	008.5000	0063.1	024.8	086.4	100.0000	0454.7	067.2	70.99	
245.0	008.5000	0062.9	024.8	086.1	100.0000	0454.3	067.0	71.03	
246.0	008.5000	0062.6	024.7	085.7	100.0000	0453.8	066.9	71.05	
247.0	008.5000	0062.5	024.7	085.4	100.0000	0453.1	066.8	71.08	
248.0	008.5000	0062.0	024.7	085.0	100.0000	0452.4	066.7	71.08	
249.0	008.5000	0061.7	024.6	084.6	100.0000	0451.7	066.7	71.08	
250.0	008.5000	0061.4	024.5	084.3	100.0000	0451.0	066.6	71.09	
251.0	008.5000	0061.3	024.5	083.9	100.0000	0450.9	066.5	71.11	

## ***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)
252.0	008.5000	0061.2	024.5	083.5	100.0000	0450.9	066.4	71.14
253.0	008.5000	0060.9	024.5	083.2	100.0000	0450.9	066.4	71.15
254.0	008.5000	0060.7	024.4	082.8	100.0000	0450.8	066.4	71.17
255.0	008.5000	0060.6	024.4	082.4	100.0000	0450.6	066.3	71.18
256.0	008.5000	0060.7	024.4	082.1	100.0000	0450.2	066.2	71.19
257.0	008.5000	0060.5	024.4	081.7	100.0000	0449.9	066.2	71.18
258.0	008.5000	0060.2	024.4	081.3	100.0000	0449.7	066.2	71.18
259.0	008.5000	0060.1	024.3	081.0	100.0000	0449.7	066.2	71.18
260.0	008.5000	0059.7	024.3	080.6	100.0000	0449.5	066.3	71.15
261.0	008.5000	0059.6	024.2	080.2	100.0000	0449.7	066.3	71.15
262.0	008.5000	0059.5	024.2	079.9	100.0000	0450.2	066.3	71.16
263.0	008.5000	0059.4	024.2	079.5	100.0000	0450.4	066.4	71.15
264.0	008.5000	0059.3	024.2	079.1	100.0000	0450.8	066.4	71.15
265.0	008.5000	0059.2	024.2	078.8	100.0000	0451.2	066.5	71.14
266.0	008.5000	0059.2	024.2	078.4	100.0000	0451.6	066.5	71.14
267.0	008.5000	0059.4	024.2	078.0	100.0000	0452.2	066.5	71.14
268.0	008.5000	0059.7	024.3	077.7	100.0000	0452.8	066.5	71.15
269.0	008.5000	0060.1	024.3	077.3	100.0000	0453.2	066.6	71.16
270.0	008.5000	0060.4	024.4	076.9	100.0000	0453.7	066.6	71.16
271.0	008.5000	0060.2	024.4	076.6	100.0000	0454.2	066.7	71.14
272.0	008.5000	0060.2	024.4	076.2	100.0000	0454.8	066.8	71.12
273.0	008.5000	0060.5	024.4	075.9	100.0000	0455.4	066.9	71.11
274.0	008.5000	0060.8	024.5	075.5	100.0000	0455.9	067.0	71.09
275.0	008.5000	0060.9	024.5	075.2	100.0000	0456.4	067.1	71.06
276.0	008.5000	0060.5	024.4	074.8	100.0000	0456.8	067.3	71.01
277.0	008.5000	0059.8	024.3	074.5	100.0000	0457.3	067.6	70.93
278.0	008.5000	0059.4	024.2	074.2	100.0000	0457.8	067.8	70.87
279.0	008.5000	0059.2	024.2	073.9	100.0000	0458.3	068.0	70.82
280.0	008.5000	0058.9	024.1	073.6	100.0000	0458.7	068.2	70.75
281.0	008.5000	0058.9	024.1	073.3	100.0000	0459.0	068.4	70.69
282.0	008.5000	0059.0	024.1	073.0	100.0000	0459.1	068.6	70.64
283.0	008.5000	0059.0	024.1	072.7	100.0000	0459.3	068.8	70.58
284.0	008.5000	0059.0	024.1	072.4	100.0000	0459.6	069.0	70.51
285.0	008.5000	0058.9	024.1	072.1	100.0000	0459.8	069.2	70.44
286.0	008.5000	0059.3	024.2	071.8	100.0000	0460.0	069.4	70.39
287.0	008.5000	0059.3	024.2	071.5	100.0000	0460.4	069.7	70.32
288.0	008.5000	0059.3	024.2	071.2	100.0000	0460.8	069.9	70.25
289.0	008.5000	0059.2	024.2	070.9	100.0000	0461.4	070.2	70.18
290.0	008.5000	0059.5	024.2	070.6	100.0000	0461.8	070.4	70.12
291.0	008.5000	0060.2	024.4	070.3	100.0000	0462.3	070.6	70.07
292.0	008.5000	0060.0	024.3	070.0	100.0000	0462.7	070.9	69.98
293.0	008.5000	0059.6	024.2	069.8	100.0000	0463.0	071.2	69.88
294.0	008.5000	0059.5	024.2	069.6	100.0000	0463.3	071.5	69.79
295.0	008.5000	0059.2	024.2	069.4	100.0000	0463.6	071.8	69.68
296.0	008.5000	0059.2	024.2	069.2	100.0000	0463.8	072.2	69.59
297.0	008.5000	0059.3	024.2	068.9	100.0000	0464.1	072.4	69.50



# ***Exhibit 7b***

## **Contour Protection Studies Toward Select Allocation Concern(s)**

10-19-2021      Terrain Data: NED 03 SEC      FMOver Analysis

WMHK    BLED19940323KA

CH206C3.P

Channel = 209C  
 Max ERP = 100 kW  
 RCAMSL = 507 m  
 N. Lat. 34 05 49.50  
 W. Lng. 80 45 50.30  
 Protected  
     60 dBu

Channel = 206C3  
 Max ERP = 8.5 kW  
 RCAMSL = 105 m  
 N. Lat. 34 13 50.70  
 W. Lng. 79 47 34.60  
 Interfering  
     100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
035.0	040.3225	0444.3	073.4	314.1	008.5000	0059.4	065.1	45.00	
036.0	042.1980	0443.6	073.8	314.7	008.5000	0059.5	063.9	45.32	
037.0	044.1162	0443.7	074.3	315.3	008.5000	0059.8	062.7	45.67	
038.0	046.0769	0445.9	075.0	316.0	008.5000	0059.8	061.4	46.01	
039.0	048.0804	0447.5	075.6	316.7	008.5000	0060.2	060.2	46.39	
040.0	050.1264	0451.1	076.3	317.6	008.5000	0060.5	059.0	46.78	
041.0	052.4755	0454.1	077.0	318.4	008.5000	0060.9	057.8	47.19	
042.0	054.8785	0456.3	077.7	319.3	008.5000	0060.9	056.5	47.58	
043.0	057.3352	0458.1	078.3	320.0	008.5000	0060.7	055.2	47.97	
044.0	059.8457	0459.7	078.9	320.8	008.5000	0061.3	053.9	48.43	
045.0	062.4100	0460.8	079.4	321.5	008.5000	0062.2	052.6	48.94	
046.0	065.6424	0461.2	080.0	322.3	008.5000	0062.3	051.3	49.38	
047.0	068.9564	0461.4	080.5	323.1	008.5000	0062.4	049.9	49.82	
048.0	072.3520	0461.6	081.0	323.8	008.5000	0063.4	048.6	50.35	
049.0	075.8293	0461.5	081.5	324.5	008.5000	0065.0	047.2	50.95	
050.0	079.3881	0461.5	082.0	325.2	008.5000	0065.3	045.8	51.45	
051.0	081.3424	0461.6	082.2	325.7	008.5000	0065.0	044.4	51.91	
052.0	083.3204	0461.4	082.4	326.1	008.5000	0064.6	043.0	52.38	
053.0	085.3222	0461.8	082.7	326.6	008.5000	0064.3	041.6	52.87	
054.0	087.3477	0461.6	082.9	327.0	008.5000	0064.3	040.1	53.41	
055.0	089.3970	0460.7	083.1	327.3	008.5000	0064.3	038.7	53.98	
056.0	091.4701	0459.7	083.2	327.6	008.5000	0064.4	037.2	54.57	
057.0	093.5669	0459.3	083.4	328.0	008.5000	0064.7	035.8	55.21	
058.0	095.6875	0459.0	083.6	328.3	008.5000	0065.2	034.3	55.88	
059.0	097.8319	0459.5	083.9	328.7	008.5000	0065.8	032.9	56.59	
060.0	100.0000	0460.1	084.2	329.1	008.5000	0066.4	031.4	57.34	
061.0	100.0000	0460.9	084.2	329.1	008.5000	0066.5	029.9	58.09	
062.0	100.0000	0461.9	084.3	329.1	008.5000	0066.4	028.5	58.93	
063.0	100.0000	0462.7	084.3	329.0	008.5000	0066.3	027.0	59.83	
064.0	100.0000	0463.4	084.4	328.8	008.5000	0066.0	025.5	60.78	
065.0	100.0000	0464.0	084.4	328.6	008.5000	0065.6	024.0	61.78	
066.0	100.0000	0464.5	084.5	328.2	008.5000	0065.0	022.6	62.80	
067.0	100.0000	0464.8	084.5	327.6	008.5000	0064.4	021.1	63.88	

## ***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)
068.0	100.0000	0464.6	084.5	326.8	008.5000	0064.3	019.7	65.05
069.0	100.0000	0464.0	084.4	325.7	008.5000	0065.0	018.2	66.33
070.0	100.0000	0462.7	084.3	324.1	008.5000	0064.4	016.9	67.46
071.0	100.0000	0461.2	084.2	322.2	008.5000	0062.4	015.5	68.41
072.0	100.0000	0459.9	084.1	319.8	008.5000	0060.8	014.1	69.41
073.0	100.0000	0459.1	084.1	317.0	008.5000	0060.1	012.8	71.10
074.0	100.0000	0458.1	084.0	313.4	008.5000	0059.4	011.6	72.90
075.0	100.0000	0456.6	083.9	308.6	008.5000	0060.9	010.4	75.00
076.0	100.0000	0455.2	083.8	302.7	008.5000	0061.4	009.4	76.90
077.0	100.0000	0453.6	083.7	295.2	008.5000	0059.1	008.5	78.23
078.0	100.0000	0452.3	083.6	286.2	008.5000	0059.3	007.8	79.60
079.0	100.0000	0450.9	083.5	275.6	008.5000	0060.5	007.3	80.77
080.0	100.0000	0450.0	083.4	264.1	008.5000	0059.3	007.1	81.04
081.0	100.0000	0449.7	083.4	252.5	008.5000	0061.1	007.2	81.06
082.0	100.0000	0450.1	083.4	241.6	008.5000	0063.4	007.6	80.55
083.0	100.0000	0450.9	083.5	231.9	008.5000	0064.6	008.2	79.50
084.0	100.0000	0450.9	083.5	224.0	008.5000	0064.7	009.0	77.92
085.0	100.0000	0452.5	083.6	217.3	008.5000	0065.5	010.0	76.34
086.0	100.0000	0454.2	083.7	211.8	008.5000	0065.4	011.0	74.52
087.0	100.0000	0455.2	083.8	207.6	008.5000	0066.0	012.2	72.71
088.0	100.0000	0455.3	083.8	204.5	008.5000	0066.4	013.5	70.91
089.0	100.0000	0455.1	083.8	202.1	008.5000	0066.4	014.9	69.25
090.0	100.0000	0456.3	083.9	199.9	008.5000	0066.9	016.2	68.32
091.0	099.4009	0456.9	083.9	198.4	008.5000	0067.1	017.6	67.14
092.0	098.8036	0457.2	083.8	197.3	008.5000	0067.1	019.0	65.94
093.0	098.2081	0457.6	083.8	196.4	008.5000	0067.2	020.4	64.77
094.0	097.6144	0458.4	083.8	195.6	008.5000	0067.3	021.9	63.64
095.0	097.0225	0458.4	083.7	195.0	008.5000	0067.3	023.3	62.53
096.0	096.4324	0458.1	083.7	194.7	008.5000	0067.4	024.8	61.47
097.0	095.8441	0458.4	083.6	194.4	008.5000	0067.4	026.2	60.46
098.0	095.2576	0459.1	083.6	194.1	008.5000	0067.3	027.7	59.51
099.0	094.6729	0459.4	083.6	193.9	008.5000	0067.3	029.1	58.64
100.0	094.0900	0459.2	083.5	193.8	008.5000	0067.3	030.6	57.84
101.0	092.5444	0458.4	083.3	194.1	008.5000	0067.3	032.1	57.14
102.0	091.0116	0457.4	083.0	194.4	008.5000	0067.4	033.5	56.50
103.0	089.4916	0456.6	082.8	194.7	008.5000	0067.4	035.0	55.87
104.0	087.9844	0456.5	082.6	195.0	008.5000	0067.3	036.4	55.25
105.0	086.4900	0456.2	082.4	195.3	008.5000	0067.3	037.9	54.65
106.0	085.0084	0455.9	082.2	195.6	008.5000	0067.3	039.3	54.08
107.0	083.5396	0455.2	082.0	196.0	008.5000	0067.3	040.7	53.52
108.0	082.0836	0454.4	081.8	196.4	008.5000	0067.2	042.1	52.97
109.0	080.6404	0453.9	081.6	196.7	008.5000	0067.2	043.6	52.45
110.0	079.2100	0453.9	081.4	197.1	008.5000	0067.2	045.0	51.94
111.0	076.0384	0453.3	080.9	197.8	008.5000	0067.1	046.4	51.45
112.0	072.9316	0452.0	080.4	198.5	008.5000	0067.0	047.7	50.99