

Technical Report Supporting a Form 340-NCE-FM Minor Change Construction Permit Modification Application

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

*WRHP(FM).C - Anniston, AL
(Facility ID: 184996)*

*"Minor Site Change and
New Directional Antenna Pattern"*

*as a
Class C3 FM Facility on
CH261C3 (100.1 MHz)*

April, 2017

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EXPLANATION OF PROPOSAL: This Form 340-FM filing and accompanying technical report supports a Minor Change Construction Permit Modification Application for NCE-FM Station Authorization WRHP(FM).C - Anniston, AL (Facility ID: 184996). This FCC Form 340-NCE-FM filing requests a new site location and new directional antenna pattern. Continued operation on CH261C3 (100.1 MHz) with a new power of 5.4 kW ERP (Circular Polarization) at a new height of 473 meters AMSL (216 meters HAAT) is requested. WRHP(FM).C will employ a new directional antenna. WRHP(FM).C will continue to specify service to the community of Anniston, AL.

FACILITY COMPLIANCE SHOWINGS: A map of the proposed 60 dBμ service contour in relation to the present 60 dBμ service contour has been included in **Exhibit 1**. The minor change proposed service area will overlap a portion of the present service area as noted in the exhibit. In addition, this exhibit demonstrates city grade service of 3.16 mV/m, or 70 dBμ F(50:50), to 100% of the 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 1026766. In support of the requested site location, a copy of the existing 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 would like to note use of the NED 03 second terrain database for all allocation, contour and HAAT showings contained here-in. A copy of the proposed HAAT calculation has been included in **Exhibit 5**.

As no change in frequency, class or community of license is proposed herein, the existing Special Allotment Reference Point of 33° 41' 45.00 " NL; 85° 48' 56.00" WL (NAD 27) remains valid for this WRHP(FM).C - Anniston, AL; CH261C3 (100.1 MHz) filing. These coordinates of record (*FA USED Allotment Record; CDBS Application ID: 295637*) represent a continued viable site location which meets both the current allocation restrictions and completely encompasses the community of license city limits with a 23.2 km Class C3 city grade reference arc. Special Allotment Reference Point documentation was previously demonstrated within the original BNPED-20100226ABT application filing.

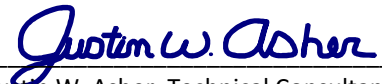
ALLOCATION COMPLIANCE SHOWINGS: The proposed full service site will meet all Class C3 spacing requirements of 47 C.F.R. Section 73.207 toward each allocation protection with the exception of WCKF(FM) - Ashland, AL (CH264A). A tabulation of the existing spacing toward each relevant allocation protection is found in ***Exhibit 6***. In this instance, the proposed facility has requested 47 C.F.R. Section 73.215 short-spacing toward WCKF(FM) as noted in ***Exhibit 7***. As WCKF(FM) remains a 47 C.F.R. Section 73.215 short-spaced facility, protection has been afforded the existing facilities. No further allocation showings are believed required.

The remainder of the information in this report is responsive to the Rules of the Commission, and provides the data for FCC Online Form 340, Section VII.

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 an antenna and feedline are being added to an existing structure. However, should the Commission determine that 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 eighteen 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
April 13, 2017

Exhibit 1

Service Contour Study: Present vs Proposed Operations

NED 03 SEC Terrain Database
US Census 2010 PL Database

WRHP.P
Anniston, AL
Proposed Operation
Facility ID: 184996
Latitude: 33-40-53 N
Longitude: 085-48-57 W
ERP: 5.40 kW
Channel: 261C3 (100.1 MHz)
AMSL Height: 473.0 m
Horiz. Pattern: Directional

70 dBμ F(50:50) Contour
Total Population: 118,226
Coverage Area: 1,724.5 sq. km

60 dBμ F(50:50) Contour
Total Population: 234,537
Coverage Area: 4,877.7 sq. km

WRHP.C
Anniston, AL
BNPED20100226ABT
Facility ID: 184996
Latitude: 33-40-41.80 N
Longitude: 085-51-08.90 W
ERP: 25.00 kW
Channel: 261C3 (100.1 MHz)
AMSL Height: 316.4 m
Horiz. Pattern: Directional

70 dBμ F(50:50) Contour
Total Population: 93,193
Coverage Area: 1,056.6 sq. km

60 dBμ F(50:50) Contour
Total Population: 159,003
Coverage Area: 3,109.3 sq. km

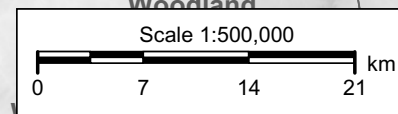


Exhibit 2

Service Contour Study: Proposed Longley-Rice Method

non-FCC-sanctioned coverage map
for illustrative purposes only

WRHP.P
Anniston, AL
Proposed Operation
Facility ID: 184996
Latitude: 33-40-53 N
Longitude: 085-48-57 W
ERP: 5.40 kW
Channel: 261C3 (100.1 MHz)
AMSL Height: 473.0 m
Horiz. Pattern: Directional
Prop Model: Longley-Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 2.0 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

70 dBμ Longley-Rice Contour
Total Population: 130,380

60 dBμ Longley-Rice Contour
Total Population: 217,895

NED 03 SEC Terrain Database
US Census 2010 PL Database

Terrain
74 730 m

> 100.0 dBuV/m
70.0 - 100.0
60.0 - 70.0
54.0 - 60.0

WRHP.P

Scale 1:675,000

0 10 20 30 km

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V-Soft Communications LLC ©

Exhibit 3
Copy of Existing Antenna Structure Registration
(public record copy)

Registration Detail

Reg Number	1026766	Status	Constructed
File Number	A0031758	Constructed	07/29/1997
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	33-40-53.0 N 085-48-57.0 W	Address	BLUE MOUNTAIN 2.4 KM NE
City, State	ANNISTON , AL		
Zip	36207	County	CALHOUN
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
452.6	76.2
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
528.8	76.2

Painting and Lighting Specifications

FAA Chapters 4, 5, 6, 8, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	97-ASO-1065-OE	FAA Issue Date	04/16/1997
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Owner & Contact Information

FRN	0001747450	Owner Entity Type	
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Owner

CALHOUN, COUNTY OF	P: (205)435-0545
Attention To: MICHAEL BURNEY	F:
1702 NOBLE ST	E: MBURNEY@EMA_SMPT.EMA.CO.CALHOUN.AL.US
ANNISTON , AL 36271	

Contact

P:
F:
E:

Last Action Status

Status	Constructed	Received	07/31/1997
Purpose	New	Entered	07/31/1997
Mode	Interactive		

Related Applications

07/31/1997 A0031758 - New (NE)

Comments

Comments

None

History

Date

Event

None

Automated Letters

None

Exhibit 4

Vertical Plan of Antenna System

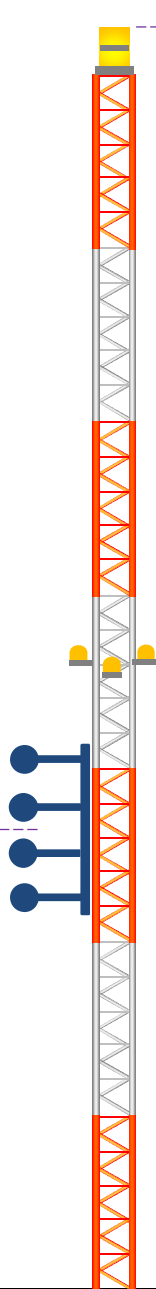
**Actual Tower is
a Three-Leg,
Self-Supported
Structure**

Proposed Antenna
4-Bay (1.0WL)
472.6 meters AMSL
HAAT: 216 meters (NED 03 SEC)

Antenna COR Height
20.0 meters AGL
(66 feet AGL)

528.8 meters AMSL
(1735 feet AMSL)

Overall Tower Height
76.2 meters AGL
(250 feet AGL)



Ground Elevation: 452.6 meters AMSL (1485 feet AMSL)

Address: On Blue Mountain; 2.4 km Northeast of Anniston

City: Anniston

County: Calhoun

State: Alabama

Latitude (D M S)

Longitude (D M S)

NAD 27 datum values:

33 40 52.62887

85 48 57.12635

NAD 83 datum values:

33 40 53.00000

85 48 57.00000

Antenna Structure Registration

1026766

Drawing
Is Not
To Scale

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1(202)875-2986

Exhibit 5

HAAT and Miscellaneous Coordinate Information

HAAT Calculation (1927):

N. Lat. = 334053.0 W. Lng. = 854857.0
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	70-F5	60-F5
000	208.9	264.1	5.4000	7.32	1.000	25.44	42.35
045	313.2	159.8	5.4000	7.32	1.000	20.15	34.31
090	313.7	159.3	5.4000	7.32	1.000	20.12	34.26
135	255.4	217.6	5.4000	7.32	1.000	23.23	39.30
180	237.5	235.5	3.2017	5.05	0.770	21.33	36.41
225	287.0	186.0	5.4000	7.32	1.000	21.62	36.84
270	242.0	231.0	5.4000	7.32	1.000	23.90	40.24
315	196.1	276.9	5.4000	7.32	1.000	26.01	43.15

Ave El= 256.73 M HAAT= 216.27 M AMSL= 473.0

NAD 1983 to NAD 1927 Conversion:

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum values:	33 40 52.62887	85 48 57.12635
NAD 83 datum values:	33 40 53.00000	85 48 57.00000

Various Coordinate Conversion Calculations (NAD 1983):

Position Type	Lat Lon
Degrees Lat Long	33.6813889°, -085.8158333°
Degrees Minutes	33°40.88333', -085°48.95000'
Degrees Minutes Seconds	33°40'53.0000", -085°48'57.0000"
UTM	16S 609764mE 3727459mN
UTM centimeter	16S 609764.84mE 3727459.02mN
MGRS	16SFC0976427459
Grid North	0.7°
GARS	189LH33
Maidenhead	EM73CQ23CM48
GEOREF	GJED11054088

Exhibit 6

Tabulation of Proposed Commercial Spacings Study

Grey Text denotes the facility to be modified by this proposal. This facility need not be protected.

Yellow Highlighted Text denotes a short-spaced processing request under 47 C.F.R. Section 73.215 toward WCKF(FM) - Ashland, AL (WCKF(FM) is presently licensed under §73.215. therefore only the existing parameters need be protected). Contour Protection has been demonstrated in ***Exhibit 7.***

Anniston Seventh-day Adventist Church

REFERENCE		DISPLAY DATES
33 40 53.0 N.	CLASS = C3	DATA 04-11-17
85 48 57.0 W.	Current Spacings to 3rd Adj.	SEARCH 04-11-17
----- Channel 261 - 100.1 MHz -----		

Call	Channel	Location	Axi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power	HAAT		
WRHP	CP -Z 261C3	Anniston	AL 264.2	3.41	152.5	-149.1
33 40 41.8	85 51 08.9	ZCX	25.000 kW	78 M		
Anniston Seventh-day Adven BNPED20100226ABT						
WCKF	LIC-N 264A	Ashland	AL 185.9	40.23	41.5	-1.3
33 19 14.0	85 51 39.0	NCX	1.700 kW	190 M		
Wckf, L.L.c. BLH20090630ABP						
WDXX	LIC-N 261C2	Selma	AL 216.3	178.54	176.5	2.0
32 22 54.0	86 56 37.0	NCX	50.000 kW	150 M		
BroadSouth Communications, BLH20130301AGT						
WGSY	LIC 261A	Phenix City	AL 149.8	149.89	141.5	8.4
32 30 42.0	85 00 41.0	CN	6.000 kW	100 M		
Cc Licenses, Llc BMLH19900403KA						
WNSY	LIC 261C3	Talking Rock	GA 48.7	161.25	152.5	8.8
34 37 50.0	84 29 29.0	CX	7.000 kW	188 M		
Davis Broadcasting Of Atla BLH20020128AAS						
WRJL-FM	LIC 260C3	Eva	AL 310.0	109.77	98.5	11.3
34 18 43.0	86 43 54.0	CX	25.000 kW	97 M		
Rojo, Inc. BLH20090121ACG						
WZRR	LIC-N 258C0	Birmingham	AL 256.0	99.01	86.5	12.5
33 27 45.0	86 50 59.0	NCN	100.000 kW	309 M		
Radio License Holding Cbc, BLH19980128KB						
AL3894	RSV-A 264A	Ashland	AL 181.2	54.11	41.5	12.6
33 11 37.0	85 49 42.0		0.000 kW	100 M		
RMcoord-36						
WAUA	CP -N 262A	Waverly	AL 169.2	101.90	88.5	13.4
32 46 43.5	85 36 40.6	NCX	5.600 kW	80 M		
Marble City Media, Llc BNP20150914ACV						
WQRV	LIC-N 262C2	Meridianville	AL 329.0	144.39	116.5	27.9
34 47 36.0	86 37 51.0	NCX	8.500 kW	299 M		
Cc Licenses, Llc BLH20060413ACK						
WQNR	LIC 260A	Tallassee	AL 179.0	137.44	88.5	48.9
32 26 32.0	85 47 28.0	CX	2.850 kW	146 M		
Tiger Communications, Inc. BLH20080624AAG						

RSV-R = reserved - needs protection, RSV-A = allocation
All separation margins include rounding

Exhibit 7

C.F.R. Section 73.215 Short-Spaced Contour Protection Studies Toward WCKF(FM) - Ashland, AL (Existing Facilities)

Anniston Seventh-day Adventist Church

FMCommander Single Allocation Study - 04-11-2017 - NED 03 SEC
WRHP.P's Overlaps (In= 0.0 km, Out= 0.0 km)

WRHP.P CH 261 C3 73.215 Z
Lat= 33 40 53.0, Lng= 85 48 57.0
5.4 kW 219.3 m HAAT, 473 m COR
Prot.= 60 dBu, Intef.= 100 dBu

WCKF CH 264 A 73.215 N BLH20090630ABP
Lat= 33 19 14.0, Lng= 85 51 39.0
1.7 kW 190 m HAAT, 529 m COR
Prot.= 60 dBu, Intef.= 100 dBu

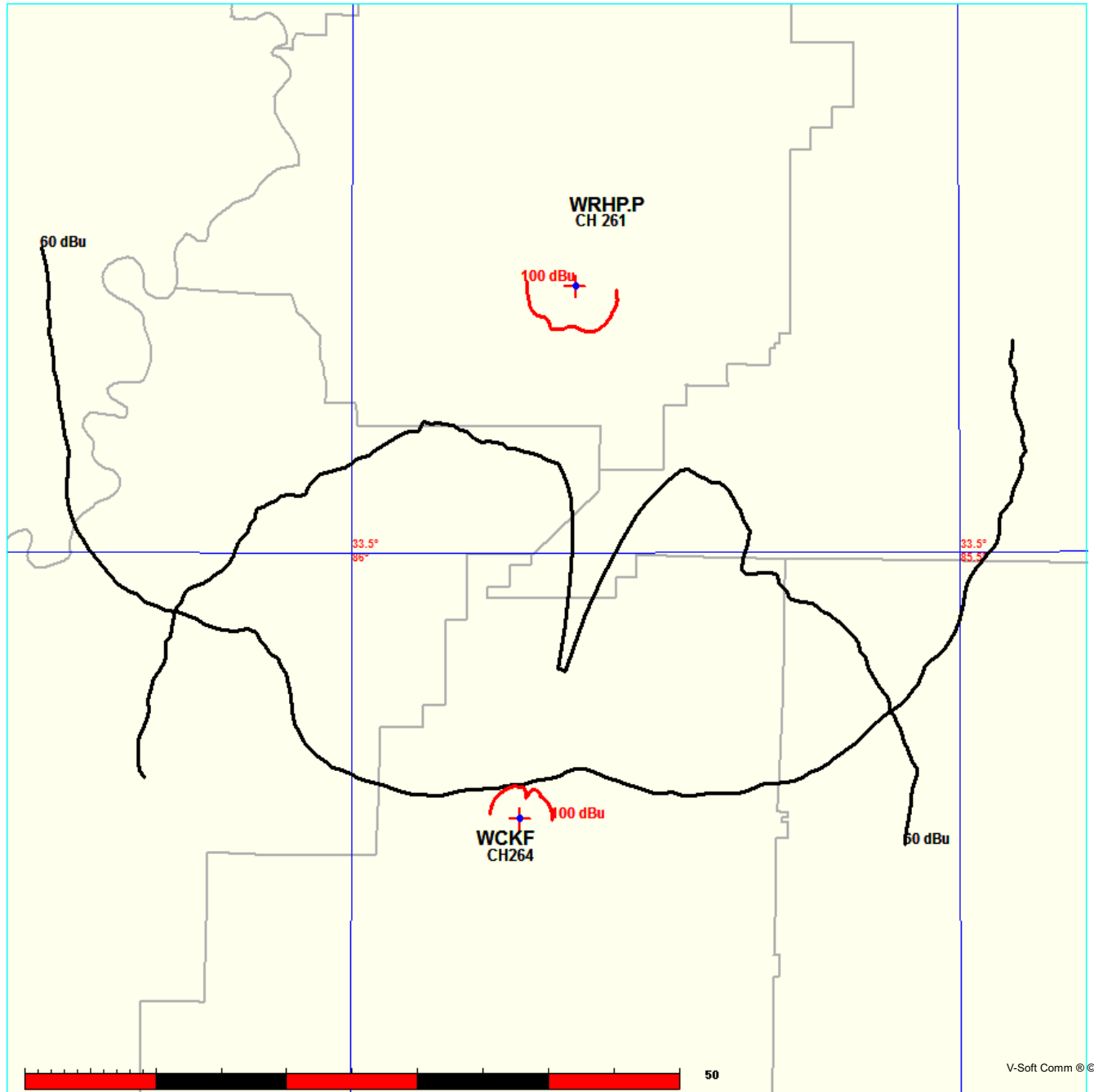


Exhibit 7

C.F.R. Section 73.215 Short-Spaced Contour Protection Studies Toward WCKF(FM) - Ashland, AL (Existing Facilities)

04-11-2017

Terrain Data: NED 03 SEC

FMOver Analysis

WRHP.P

WCKF BLH20090630ABP

Channel = 261C3
Max ERP = 5.4 kW
RCAMSL = 473 m
N. Lat. 33 40 53.0
W. Lng. 85 48 57.0
Protected
60 dBu

Channel = 264A
Max ERP = 1.7 kW
RCAMSL = 529 m
N. Lat. 33 19 14.0
W. Lng. 85 51 39.0
Interfering
100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
146.0	005.4000	0231.5	040.3	075.8	001.7000	0208.1	027.5	62.67	
147.0	005.4000	0233.1	040.4	076.6	001.7000	0209.6	026.9	63.15	
148.0	005.4000	0236.0	040.6	077.4	001.7000	0211.0	026.3	63.61	
149.0	005.4000	0237.1	040.6	078.1	001.7000	0211.2	025.7	64.07	
150.0	005.4000	0238.4	040.7	078.8	001.7000	0211.3	025.0	64.53	
151.0	005.4000	0238.7	040.8	079.4	001.7000	0212.0	024.4	65.04	
152.0	005.4000	0241.3	040.9	080.3	001.7000	0214.4	023.7	65.60	
153.0	005.4000	0240.8	040.9	080.8	001.7000	0215.2	023.0	66.14	
154.0	005.4000	0240.4	040.9	081.2	001.7000	0215.1	022.4	66.66	
155.0	005.4000	0241.4	040.9	082.0	001.7000	0216.5	021.7	67.23	
156.0	005.4000	0241.4	040.9	082.5	001.7000	0219.1	021.0	67.87	
157.0	005.4000	0238.4	040.7	082.5	001.7000	0219.3	020.3	68.47	
158.0	005.4000	0235.6	040.5	082.6	001.7000	0219.5	019.5	69.06	
159.0	005.4000	0231.3	040.3	082.2	001.7000	0217.5	018.8	69.60	
160.0	005.4000	0231.4	040.3	082.8	001.7000	0220.6	018.1	70.28	
161.0	005.2925	0233.9	040.3	083.3	001.7000	0220.8	017.4	70.86	
162.0	005.1862	0236.1	040.3	083.7	001.7000	0220.0	016.7	71.41	
163.0	005.0809	0235.2	040.0	083.4	001.7000	0220.4	016.0	72.04	
164.0	004.9766	0234.0	039.8	082.9	001.7000	0221.1	015.3	72.69	
165.0	004.8735	0234.3	039.6	082.8	001.7000	0220.7	014.6	73.11	
166.0	004.7714	0235.9	039.6	082.9	001.7000	0221.0	013.9	73.99	
167.0	004.6705	0237.0	039.5	082.8	001.7000	0220.7	013.2	74.91	
168.0	004.5706	0237.3	039.3	082.4	001.7000	0218.3	012.5	75.81	
169.0	004.4717	0233.3	038.9	080.5	001.7000	0214.9	011.8	76.74	
170.0	004.3740	0235.5	038.9	080.4	001.7000	0214.7	011.1	77.81	
171.0	004.2486	0237.7	038.8	079.9	001.7000	0213.2	010.4	78.88	
172.0	004.1249	0237.1	038.5	078.2	001.7000	0211.3	009.7	79.96	
173.0	004.0031	0234.3	038.1	075.3	001.7000	0207.7	009.1	80.94	
174.0	003.8832	0233.7	037.8	072.8	001.7000	0205.9	008.5	82.00	
175.0	003.7650	0233.1	037.5	069.8	001.7000	0201.4	007.9	82.92	
176.0	003.6487	0232.5	037.2	066.3	001.7000	0198.4	007.4	83.92	

Exhibit 7

C.F.R. Section 73.215 Short-Spaced Contour Protection Studies Toward WCKF(FM) - Ashland, AL (Existing Facilities)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
177.0	003.5342	0232.4	037.0	062.4	001.7000	0199.2	006.9	85.10
178.0	003.4215	0232.0	036.7	057.8	001.7000	0189.3	006.5	85.80
179.0	003.3107	0232.6	036.5	052.8	001.7000	0169.6	006.0	86.10
180.0	003.2017	0235.5	036.4	048.4	001.7000	0162.8	005.6	87.06
181.0	003.2017	0239.4	036.7	045.6	001.7000	0163.7	004.9	89.00
182.0	003.2017	0244.8	037.0	042.7	001.7000	0142.9	004.3	90.18
183.0	003.2017	0247.8	037.2	036.9	001.7000	0189.4	003.7	93.97
184.0	003.2017	0251.0	037.4	029.2	001.7000	0202.5	003.2	96.17
185.0	003.2017	0253.0	037.5	018.3	001.7000	0069.9	002.9	91.04
186.0	003.2017	0257.9	037.8	005.2	001.7000	0170.0	002.5	98.55
187.0	003.2017	0260.4	038.0	349.6	001.7000	0216.8	002.5	99.69
188.0	003.2017	0262.9	038.1	334.6	001.7000	0209.7	002.6	98.88
189.0	003.2017	0267.0	038.4	320.7	001.7000	0221.7	002.9	97.98
190.0	003.2017	0269.0	038.5	311.5	001.7000	0206.7	003.3	95.81
191.0	003.3107	0268.3	038.7	303.5	001.7000	0223.7	003.8	94.36
192.0	003.4215	0266.4	038.8	298.5	001.7000	0219.4	004.4	92.32
193.0	003.5342	0266.3	039.1	293.6	001.7000	0209.2	005.0	90.29
194.0	003.6487	0268.8	039.5	288.4	001.7000	0210.8	005.7	88.62
195.0	003.7650	0269.3	039.8	285.4	001.7000	0207.6	006.3	86.76
196.0	003.8832	0269.0	040.0	283.6	001.7000	0208.2	007.0	85.11
197.0	004.0031	0267.4	040.1	282.8	001.7000	0208.9	007.8	83.61
198.0	004.1249	0266.1	040.3	282.1	001.7000	0210.4	008.5	82.27
199.0	004.2486	0263.6	040.4	282.1	001.7000	0210.5	009.2	80.95
200.0	004.3740	0260.9	040.5	282.3	001.7000	0209.7	009.9	79.65
201.0	004.4717	0257.4	040.4	283.0	001.7000	0209.1	010.6	78.42
202.0	004.5706	0255.8	040.5	283.2	001.7000	0209.2	011.3	77.26
203.0	004.6705	0254.8	040.6	283.2	001.7000	0209.1	012.0	76.13
204.0	004.7714	0253.3	040.7	283.4	001.7000	0208.6	012.7	75.05
205.0	004.8735	0250.3	040.7	284.1	001.7000	0207.3	013.4	74.03
206.0	004.9766	0248.2	040.7	284.5	001.7000	0207.5	014.1	73.13
207.0	005.0809	0247.3	040.8	284.6	001.7000	0207.2	014.8	72.25
208.0	005.1862	0242.7	040.7	285.7	001.7000	0207.8	015.5	71.93
209.0	005.2925	0238.4	040.6	286.6	001.7000	0210.0	016.2	71.46
210.0	005.4000	0233.9	040.4	287.6	001.7000	0212.0	016.8	70.99
211.0	005.4000	0229.7	040.2	289.0	001.7000	0212.0	017.5	70.46
212.0	005.4000	0223.4	039.7	290.9	001.7000	0213.1	018.1	70.01
213.0	005.4000	0219.6	039.4	292.1	001.7000	0210.4	018.7	69.39
214.0	005.4000	0208.5	038.6	294.9	001.7000	0212.4	019.2	69.04
215.0	005.4000	0197.9	037.8	297.6	001.7000	0216.0	019.7	68.75
216.0	005.4000	0190.7	037.2	299.4	001.7000	0220.3	020.3	68.46
217.0	005.4000	0184.1	036.7	301.1	001.7000	0223.3	020.9	68.11
218.0	005.4000	0180.9	036.4	302.0	001.7000	0222.9	021.5	67.62
219.0	005.4000	0178.0	036.2	302.9	001.7000	0223.7	022.1	67.18
220.0	005.4000	0179.1	036.2	302.8	001.7000	0223.5	022.8	66.68
221.0	005.4000	0177.0	036.1	303.5	001.7000	0223.8	023.4	66.24

Exhibit 7

C.F.R. Section 73.215 Short-Spaced Contour Protection Studies Toward WCKF(FM) - Ashland, AL (Existing Facilities)

04-11-2017

Terrain Data: NED 03 SEC

FMOver Analysis

WCKF BLH20090630ABP

WRHP.P

Channel = 264A
Max ERP = 1.7 kW
RCAMSL = 529 m
N. Lat. 33 19 14.0
W. Lng. 85 51 39.0
Protected
60 dBu

Channel = 261C3
Max ERP = 5.4 kW
RCAMSL = 473 m
N. Lat. 33 40 53.0
W. Lng. 85 48 57.0
Interfering
100 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
323.0	001.7000	0218.7	030.3	234.6	005.4000	0237.2	027.5	68.84	
324.0	001.7000	0214.8	030.0	234.0	005.4000	0235.8	026.9	69.14	
325.0	001.7000	0208.1	029.5	233.0	005.4000	0229.1	026.4	69.25	
326.0	001.7000	0206.1	029.4	232.6	005.4000	0226.6	025.9	69.51	
327.0	001.7000	0210.6	029.7	233.3	005.4000	0231.4	025.4	70.06	
328.0	001.7000	0212.2	029.8	233.5	005.4000	0233.0	024.9	70.49	
329.0	001.7000	0215.9	030.1	234.0	005.4000	0235.6	024.3	70.97	
330.0	001.7000	0213.8	029.9	233.5	005.4000	0233.2	023.8	71.26	
331.0	001.7000	0212.2	029.8	233.1	005.4000	0229.5	023.3	71.50	
332.0	001.7000	0210.2	029.7	232.5	005.4000	0225.9	022.8	71.74	
333.0	001.7000	0209.0	029.6	232.1	005.4000	0224.1	022.3	72.05	
334.0	001.7000	0208.8	029.6	231.7	005.4000	0221.2	021.8	72.33	
335.0	001.7000	0210.8	029.7	231.8	005.4000	0222.0	021.3	72.78	
336.0	001.7000	0211.7	029.8	231.6	005.4000	0220.2	020.8	73.12	
337.0	001.7000	0209.0	029.6	230.7	005.4000	0212.5	020.3	73.16	
338.0	001.7000	0212.0	029.8	230.9	005.4000	0213.5	019.8	73.65	
339.0	001.7000	0212.7	029.9	230.6	005.4000	0211.6	019.3	73.99	
340.0	001.7000	0214.8	030.0	230.5	005.4000	0211.2	018.7	74.41	
341.0	001.7000	0215.4	030.1	230.1	005.4000	0210.1	018.2	74.78	
342.0	001.7000	0217.9	030.2	230.0	005.4000	0209.8	017.6	75.23	
343.0	001.7000	0218.5	030.3	229.4	005.4000	0206.9	017.1	75.52	
344.0	001.7000	0218.6	030.3	228.7	005.4000	0202.9	016.7	75.76	
345.0	001.7000	0216.4	030.1	227.4	005.4000	0200.7	016.3	75.99	
346.0	001.7000	0225.7	030.8	228.6	005.4000	0202.7	015.5	76.74	
347.0	001.7000	0220.8	030.4	226.5	005.4000	0195.1	015.2	76.65	
348.0	001.7000	0219.9	030.4	225.3	005.4000	0188.1	014.8	76.55	
349.0	001.7000	0217.6	030.2	223.6	005.4000	0174.0	014.4	76.32	
350.0	001.7000	0214.3	030.0	221.5	005.4000	0176.2	014.1	76.76	
351.0	001.7000	0208.6	029.6	218.9	005.4000	0178.0	014.0	77.02	
352.0	001.7000	0205.8	029.4	216.8	005.4000	0184.9	013.8	77.62	
353.0	001.7000	0197.2	028.8	213.6	005.4000	0213.5	013.9	78.69	

Exhibit 7

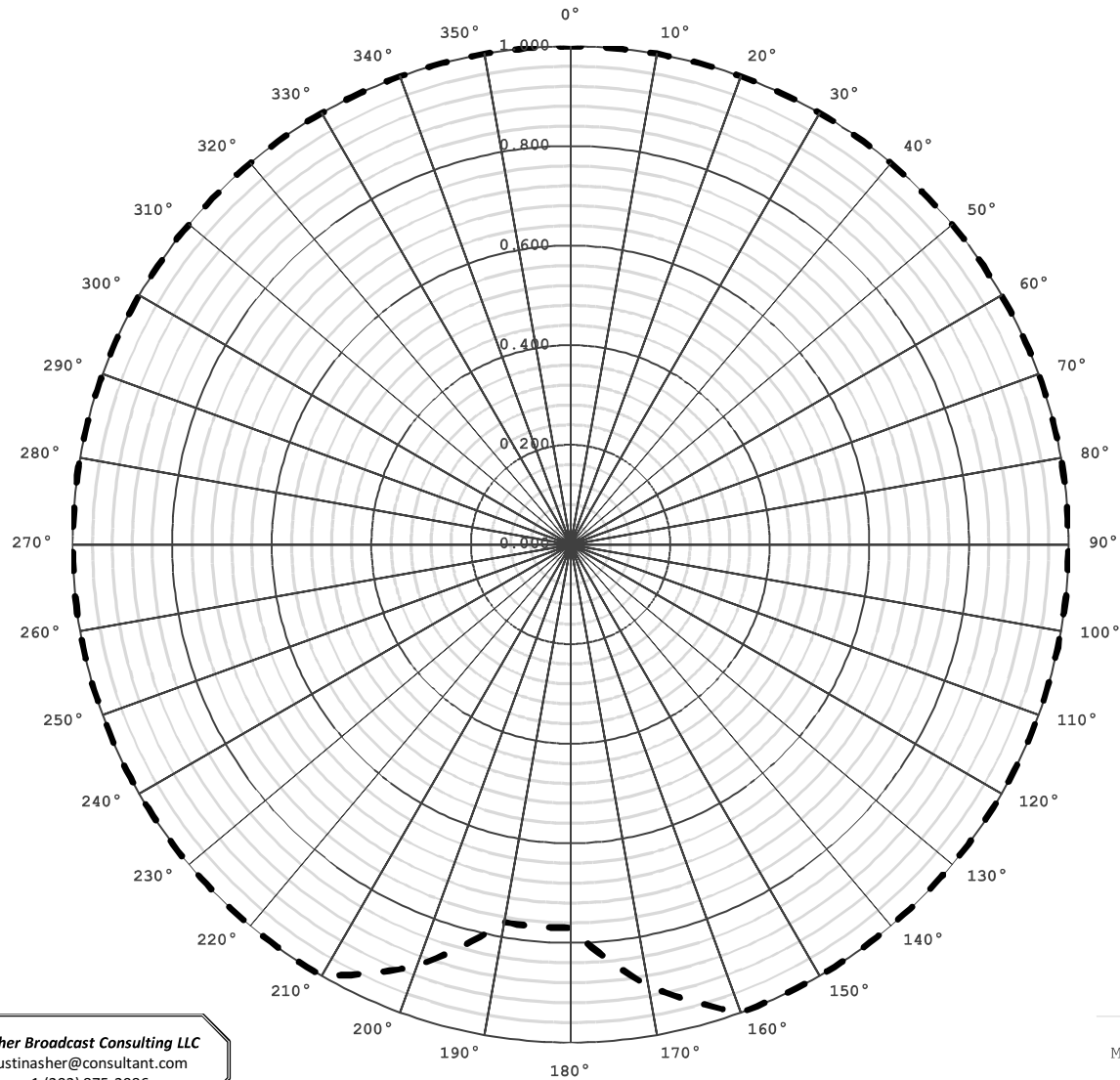
C.F.R. Section 73.215 Short-Spaced Contour Protection Studies Toward WCKF(FM) - Ashland, AL (Existing Facilities)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
354.0	001.7000	0192.2	028.4	211.1	005.4000	0229.3	013.8	79.36
355.0	001.7000	0193.6	028.5	209.6	005.3589	0235.5	013.5	80.05
356.0	001.7000	0191.2	028.4	207.5	005.1285	0245.3	013.3	80.39
357.0	001.7000	0188.9	028.2	205.3	004.9013	0249.5	013.2	80.50
358.0	001.7000	0184.0	027.9	202.8	004.6454	0255.0	013.3	80.36
359.0	001.7000	0182.6	027.8	200.7	004.4383	0258.6	013.2	80.43
000.0	001.7000	0180.9	027.7	198.5	004.1881	0264.6	013.1	80.48
001.0	001.7000	0179.1	027.5	196.3	003.9237	0268.4	013.1	80.35
002.0	001.7000	0178.4	027.5	194.2	003.6771	0268.8	013.0	80.18
003.0	001.7000	0176.2	027.3	192.1	003.4290	0266.2	013.1	79.71
004.0	001.7000	0172.3	027.1	189.9	003.2017	0269.4	013.3	79.24
005.0	001.7000	0170.1	026.9	187.8	003.2017	0262.3	013.4	78.83
006.0	001.7000	0169.8	026.9	185.8	003.2017	0257.0	013.4	78.62
007.0	001.7000	0160.3	026.2	184.0	003.2017	0250.9	014.1	77.49
008.0	001.7000	0148.8	025.4	182.4	003.2017	0246.3	015.0	76.55
009.0	001.7000	0134.4	024.3	181.3	003.2017	0241.5	016.2	75.42
010.0	001.7000	0115.2	022.7	180.7	003.2017	0237.7	017.7	73.97
011.0	001.7000	0094.4	020.6	180.7	003.2017	0237.5	019.9	72.20
012.0	001.7000	0074.6	018.2	181.0	003.2017	0239.3	022.3	70.36
013.0	001.7000	0050.6	014.8	181.9	003.2017	0244.2	025.7	68.04
014.0	001.7000	0027.9	011.5	182.7	003.2017	0247.2	028.9	65.98
015.0	001.7000	0008.8	011.5	182.3	003.2017	0246.1	029.0	65.92
016.0	001.7000	0000.8	011.5	182.0	003.2017	0244.6	029.0	65.84
017.0	001.7000	0027.6	011.5	181.6	003.2017	0242.9	029.1	65.75
018.0	001.7000	0058.6	016.1	178.2	003.4028	0232.0	024.8	68.47
019.0	001.7000	0082.2	019.2	174.6	003.8097	0233.5	022.1	71.08
020.0	001.7000	0107.7	022.0	170.2	004.3503	0235.8	019.7	73.61
021.0	001.7000	0135.4	024.3	165.4	004.8371	0234.8	018.0	75.45
022.0	001.7000	0154.4	025.8	161.3	005.2593	0235.4	017.1	76.56
023.0	001.7000	0166.7	026.7	158.1	005.4000	0235.3	016.8	76.96
024.0	001.7000	0184.8	027.9	153.8	005.4000	0240.3	016.3	77.55
025.0	001.7000	0198.0	028.8	150.2	005.4000	0238.9	016.1	77.63
026.0	001.7000	0203.1	029.2	148.2	005.4000	0236.5	016.4	77.36
027.0	001.7000	0203.0	029.2	147.3	005.4000	0234.2	016.8	76.91
028.0	001.7000	0202.3	029.1	146.6	005.4000	0231.6	017.3	76.42
029.0	001.7000	0202.8	029.2	145.7	005.4000	0231.3	017.7	76.05
030.0	001.7000	0203.3	029.2	144.9	005.4000	0229.8	018.1	75.63
031.0	001.7000	0206.6	029.4	143.6	005.4000	0228.9	018.5	75.28
032.0	001.7000	0207.0	029.5	142.9	005.4000	0228.7	019.0	74.89
033.0	001.7000	0204.6	029.3	142.9	005.4000	0228.8	019.5	74.46
034.0	001.7000	0200.9	029.0	143.1	005.4000	0228.3	020.1	73.98
035.0	001.7000	0196.0	028.7	143.6	005.4000	0228.9	020.7	73.53

Manufacturer's	Make/Model	Orientation	Power
Element 1:	Custom Parasitic	TBD	100.0%
Element 2:			
Element 3:			
Element 4:			

Composite Power: 100%

Exhibit 8 - Copy of Proposed Directional Antenna Pattern Data



Azimuth ° True	FCC Pattern	Manufacturer's Pattern
0°	1.000	TBD
10°	1.000	TBD
20°	1.000	TBD
30°	1.000	TBD
40°	1.000	TBD
50°	1.000	TBD
60°	1.000	TBD
70°	1.000	TBD
80°	1.000	TBD
90°	1.000	TBD
100°	1.000	TBD
110°	1.000	TBD
120°	1.000	TBD
130°	1.000	TBD
140°	1.000	TBD
150°	1.000	TBD
160°	1.000	TBD
170°	0.900	TBD
180°	0.770	TBD
190°	0.770	TBD
200°	0.900	TBD
210°	1.000	TBD
220°	1.000	TBD
230°	1.000	TBD
240°	1.000	TBD
250°	1.000	TBD
260°	1.000	TBD
270°	1.000	TBD
280°	1.000	TBD
290°	1.000	TBD
300°	1.000	TBD
310°	1.000	TBD
320°	1.000	TBD
330°	1.000	TBD
340°	1.000	TBD
350°	1.000	TBD

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FCC Pattern: ---
Manufacturer's Pattern: ———