

Technical Report Supporting a Form 349 Minor Modification of Construction Permit Application

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

for

*W228BY.L - Miami, FL
(Facility ID: 140483)*

“New Directional Antenna Pattern”

as a

*Commercial, Fill-In
FM Translator for
WHYI-FM-HD2 - Fort Lauderdale, FL*

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EXPLANATION OF PROPOSAL: This Form 349 Filing and accompanying technical report supports a Minor Modification of Construction Permit Application for FM Translator W228BY - Miami, FL (Facility ID: 140483). This FCC Form 349 Filing requests a new directional antenna pattern. Continued operation on CH228D (93.5 MHz) with a power of 0.250 kW ERP (circular polarization) is requested from the current Construction Permit site and antenna COR of 241 meters AMSL. This Form 349 Filing will continue to specify rebroadcast of Class C0, FM Primary Station WHYI-FM-HD2 - Fort Lauderdale, FL (CH264C0); Facility ID No. 41381. The Translator will remain licensed to the community of Miami, FL.

The applicant would like to note a request for 47 C.F.R. Section 73.3517 Contingent Processing between applications for FM Translators W228BV - Fort Lauderdale, FL (Facility ID: 138576) and W228BY - Miami, FL (Facility ID: 140483). Both applications have been filed concurrent with one another and reference this Section 73.3517 Contingent Processing Request within each filing. In this instance, a request for a continuation of 47 C.F.R. Section 74.1204(c)(1-4) existing contour overlap between the two licensed Translators is requested. This existing 18.14 km² of contour overlap will be reduced to 12.42 km² of contour overlap as noted herein.

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. The proposed 60 dBμ contour of the Translator lies wholly inside the larger FM primary daytime 60 dBμ contour. The primary station service contour relationship has been plotted in **Exhibit 2**.

The proposed facility will be located on the tower bearing Antenna Structure Registration Number 1201468. 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 herein. A copy of the proposed HAAT calculation has been included in **Exhibit 5**.

ALLOCATION COMPLIANCE SHOWINGS: The proposed Translator remains in compliance with 47 C.F.R. Section 74.1204 toward all allocation protection concerns with the exception of WMIA-FM - Miami Beach, FL (CH230C0) and WFEZ(FM) - Miami, FL (CH226C0). A general allocation study for this proposal is found in ***Exhibit 6***.

The applicant would like to note the existence of multiple 47 C.F.R. Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Requests toward WMIA-FM - Miami Beach, FL (CH230C0) and WFEZ(FM) - Miami, FL (CH226C0) as included in ***Exhibit 8***. Protection of the worst case calculated 126.5 dBμ F(50:10) Interference Contour, corresponding to the 86.5 dBμ F(50:50) Protected Contour, has been demonstrated through a downward radiation study. Full protection will be afforded each facility as this area will not reach the ground nor a 213.5 meter artificial plane representing the top 50th occupied floor of this 55 story office building (see ***Exhibit 4***), when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in ***Exhibit 9***.

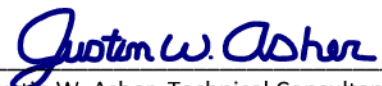
There are two additional facilities, existing or proposed, close enough to merit further study. Therefore, a supplemental contour protection study has been provided toward each facility as included in ***Exhibit(s) 7(a-b)***. With regard to the ***Exhibit 7b(1-2)*** protection between W228BV - Fort Lauderdale, FL (Facility ID: 138576) and W228BY - Miami, FL (Facility ID: 140483); the applicant would like to note a request for 47 C.F.R. Section 73.3517 Contingent Processing. In this instance, a request for a continuation of 47 C.F.R. Section 74.1204(c)(1-4) existing contour overlap between the two licensed Translators is requested. This existing 18.14 km² of contour overlap will be reduced to 12.42 km² of contour overlap as noted in ***Exhibit 7b(1-2)***.

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 an existing antenna and feed-line are being added and/or reused on an 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 nineteen 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
June 19, 2018

Exhibit 1
Service Contour Study:
Present vs Proposed Operations

NED 03 SEC Terrain Database
US Census 2010 PL Database

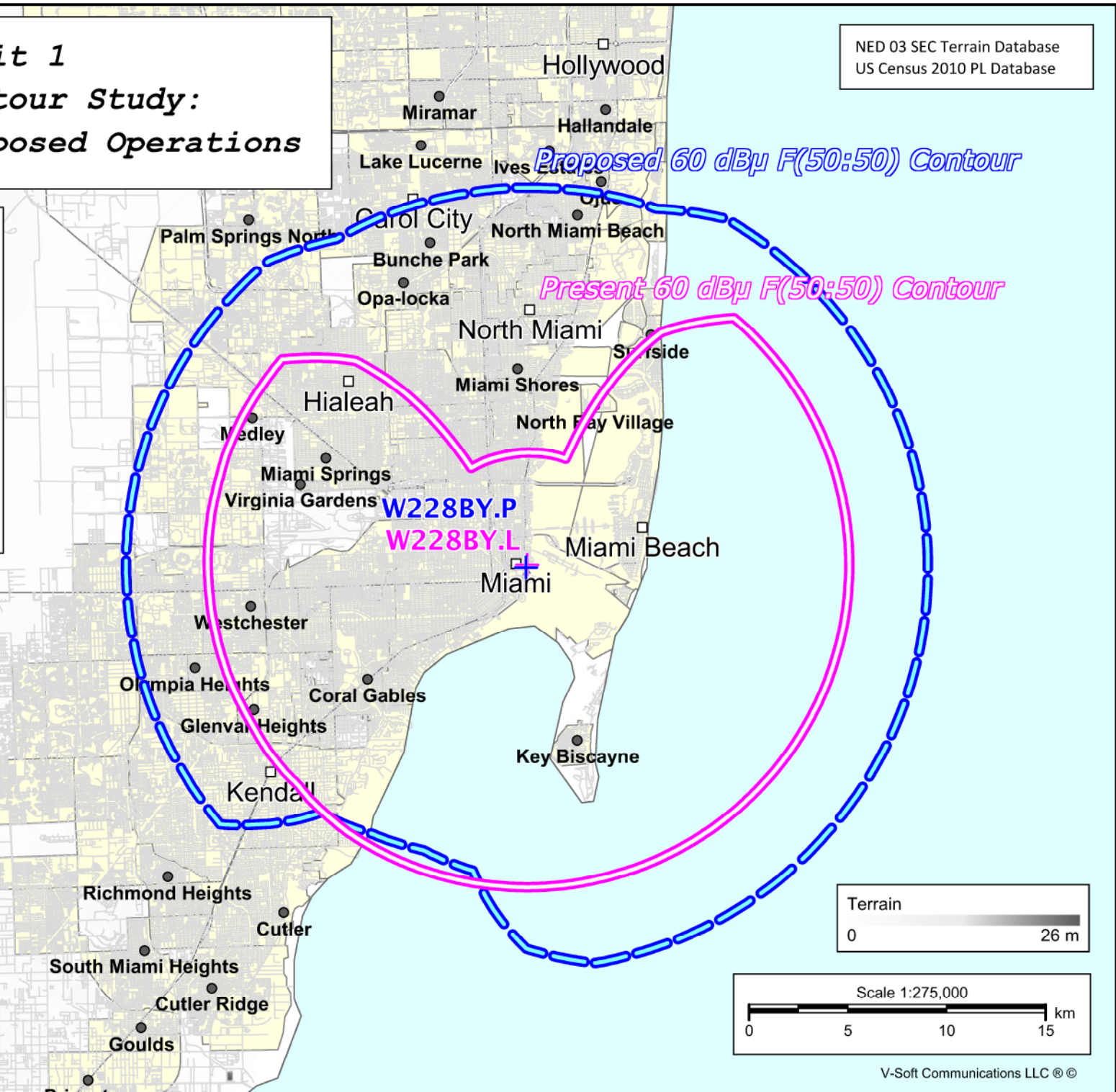
W228BY.P
Miami, FL
Proposed Operation
Facility ID: 140483
Latitude: 25-46-20 N
Longitude: 080-11-20 W
ERP: 0.25 kW
Channel: 228D (93.5 MHz)
AMSL Height: 241.0 m
Horiz. Pattern: Directional

60 dBμ F(50:50) Contour
Total Population: 1,483,209
Total Area: 1,206.9 sq. km

W228BY.L
Miami, FL
BLFT20130222ACK
Facility ID: 140483
Latitude: 25-46-24 N
Longitude: 080-11-18 W
ERP: 0.25 kW
Channel: 228D (93.5 MHz)
AMSL Height: 156.0 m
Horiz. Pattern: Directional

60 dBμ F(50:50) Contour
Total Population: 802,929
Total Area: 692.1 sq. km

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



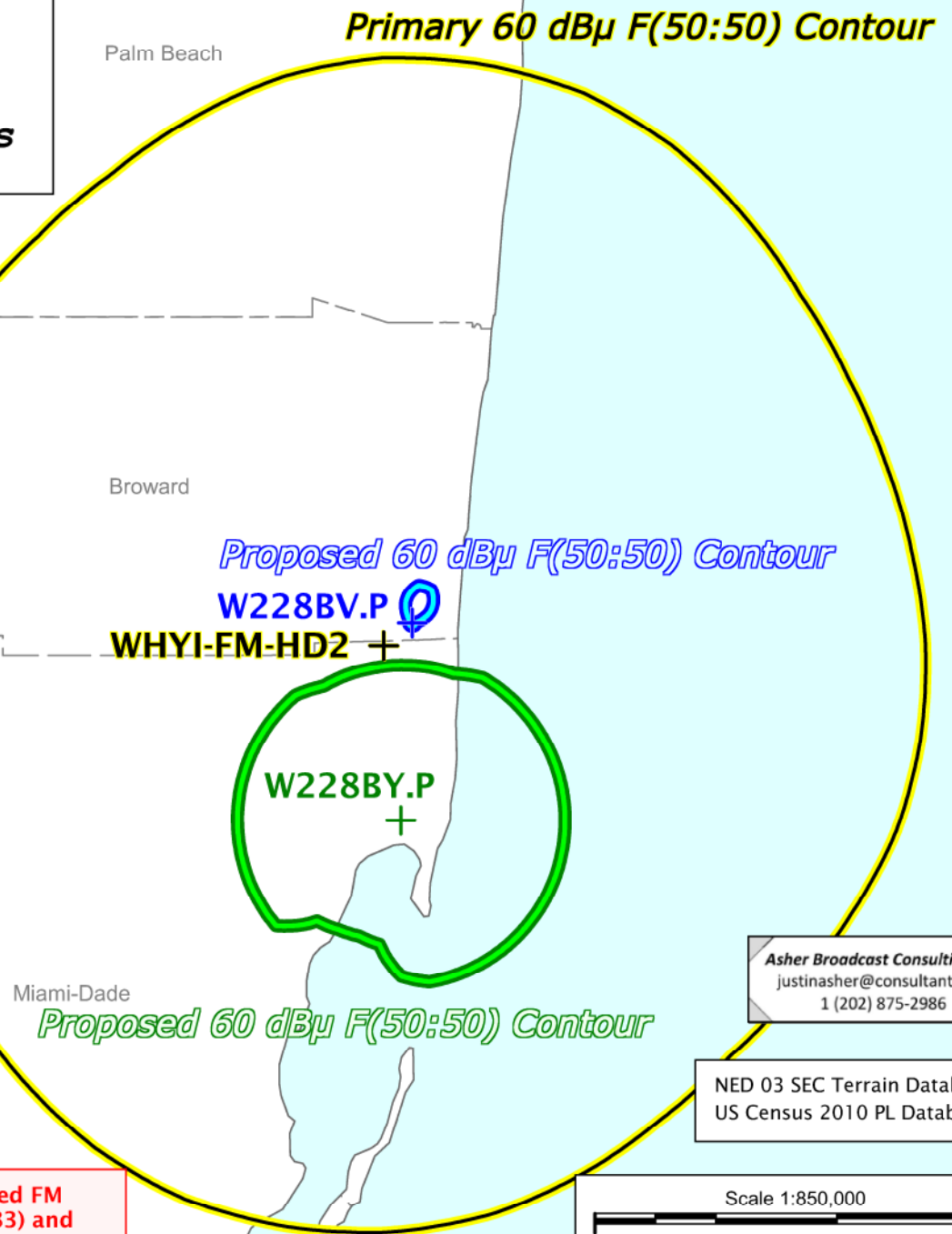
V-Soft Communications LLC ©

Exhibit 2
Service Contour Study:
Proposed vs Primary Operations

WHYI-FM-HD2
Fort Lauderdale, FL
BLH20050225AAQ
BDNH-20120118ADF
Facility ID: 41381
Latitude: 25-58-02 N
Longitude: 080-12-34 W
ERP: 100.00 kW
Channel: 264C0 (100.7 MHz)
AMSL Height: 308.0 m
Pattern: Directional

W228BV.P
Fort Lauderdale, FL
Proposed Operation
Facility ID: 138576
Latitude: 25-59-34 N
Longitude: 080-10-27 W
ERP: 0.001 kW
Channel: 228D (93.5 MHz)
AMSL Height: 264.0 m
Horiz. Pattern: Directional

W228BY.P
Miami, FL
Proposed Operation
Facility ID: 140483
Latitude: 25-46-20 N
Longitude: 080-11-20 W
ERP: 0.25 kW
Channel: 228D (93.5 MHz)
AMSL Height: 241.0 m
Pattern: Directional



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NED 03 SEC Terrain Database
US Census 2010 PL Database

FM Primary Station WHYI-FM-HD2 will be rebroadcast on co-owned FM Fill-In Translators W228BY(proposed) - Miami, FL (FAC ID: 140483) and W228BV(proposed) - Fort Lauderdale, FL (FAC ID:138576); however, neither proposal will serve substantially the same area.

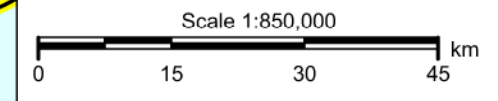


Exhibit 3

Copy of Existing Antenna Structure Registration

(public record copy)

Registration Detail

Reg Number	1201468	Status	Constructed
File Number	A0985003	Constructed	12/10/2015
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type	B - Building		
Location (in NAD83 Coordinates)			
Lat/Long	25-46-21.3 N 080-11-19.1 W	Address	200 S Biscayne Blvd (First Union Building)
City, State	Miami , FL		
Zip	33131	County	MIAMI-DADE
Center of AM Array		Position of Tower in Array	
Heights (meters)			
Elevation of Site Above Mean Sea Level	3.3	Overall Height Above Ground (AGL)	239.5
Overall Height Above Mean Sea Level	242.8	Overall Height Above Ground w/o Appurtenances	239.5

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	96-ASO-79-OE	FAA Issue Date	03/04/1996
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Owner & Contact Information

FRN	0009773607	Owner Entity Type	Corporation
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Owner

Telecommunications Properties, Inc.
Attention To: Jimmy Chiles
901 Main St.
Suite 2600
Dallas , TX 75202

P: (214)231-3348
F:
E: jchiles@tpicom.com

Contact

Chiles , Jimmy
Attention To: Jimmy Chiles
901 Main St.
Suite 2600
Dallas , TX 75202

P: (214)231-3348
F:
E: jchiles@tpicom.com

Last Action Status

Status	Constructed	Received	12/17/2015
Purpose	Notification	Entered	12/17/2015
Mode	Interactive		

Related Applications

12/17/2015	A0985003 - Notification (NT)
12/04/2014	A0928015 - Change Owner (OC)
08/16/1999	A0092614 - New (NE)

Comments

Comments

None

History

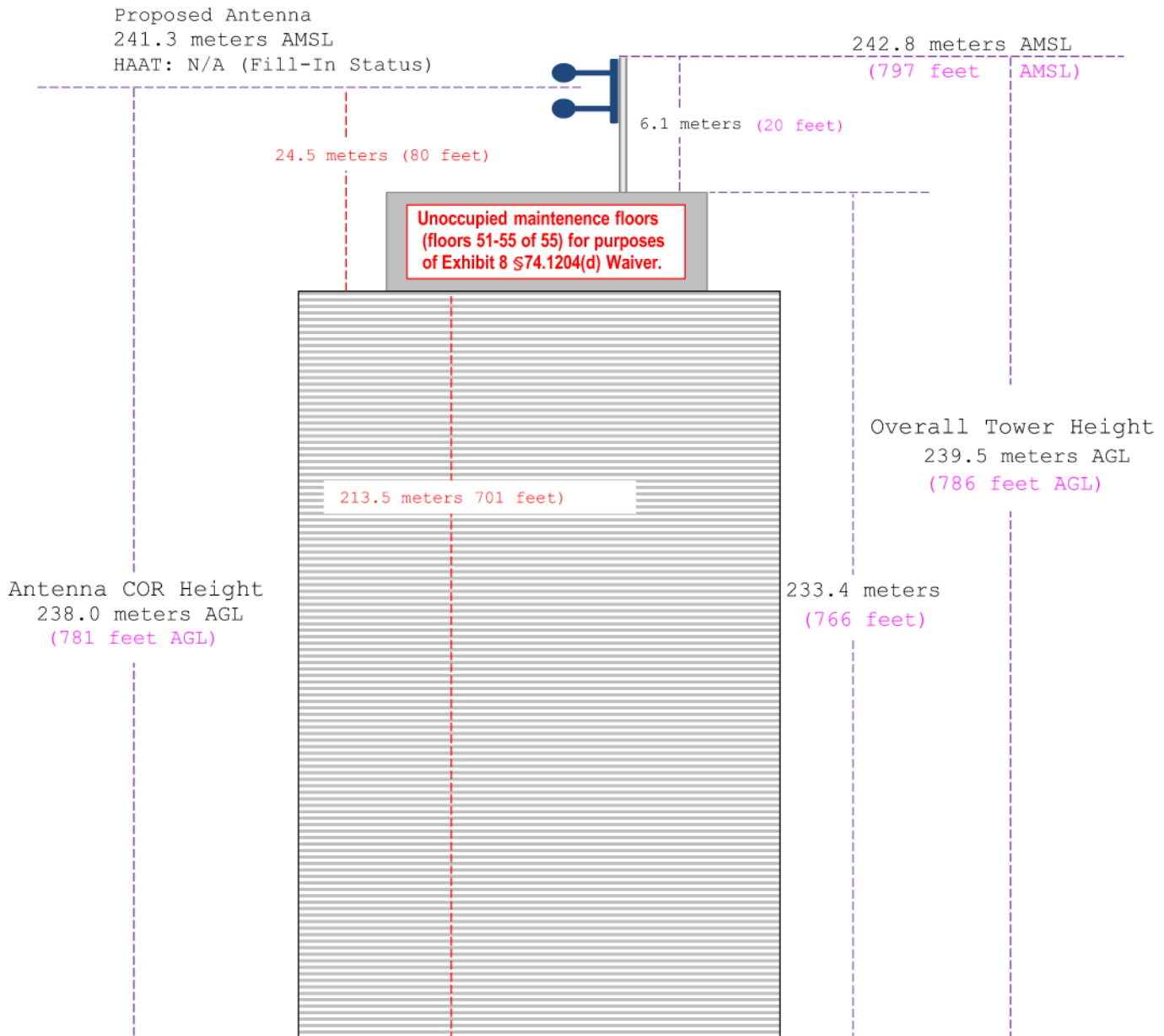
Date	Event
12/17/2015	Construction Notification Received
12/08/2015	Construction Reminder Letter Sent
12/05/2014	Registration Printed
All History (8)	

Automated Letters

12/08/2015	Construction Reminder, Reference 890501
12/05/2014	Authorization, Reference
12/05/2014	Ownership Change, Reference 837301
All letters (5)	

Exhibit 4

Vertical Plan of Antenna System



Ground Elevation: 3.3 meters AMSL (11 feet AMSL)		
Address: 200 S Biscayne Blvd. (First Union Financial Center / Wachovia Financial Center)		
City: Miami	Latitude (D M S) Longitude (D M S)	
County: Miami-Dade	NAD 27 datum values: 25 46 19.94310 80 11 19.92886	
State: Florida	NAD 83 datum values: 25 46 21.30000 80 11 19.10000	
Antenna Structure Registration 1201468	Drawing Is Not To Scale	Asher Broadcast Consulting, LLC justinasher@consultant.com 1(202)875-2986

Exhibit 5

HAAT and Miscellaneous Coordinate Information

HAAT Calculation (1927):

N. Lat. = 254620.0 W. Lng. = 801120.0
 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	2.2	238.8	0.2025	-6.94	0.900	19.19
030	0.2	240.8	0.2500	-6.02	1.000	20.30
060	0.2	240.8	0.2500	-6.02	1.000	20.30
090	0.1	240.9	0.2500	-6.02	1.000	20.30
120	0.2	240.8	0.2500	-6.02	1.000	20.30
150	0.1	240.9	0.2500	-6.02	1.000	20.30
180	0.0	241.0	0.2025	-6.94	0.900	19.27
210	0.0	241.0	0.0900	-10.46	0.600	15.54
240	3.3	237.7	0.2500	-6.02	1.000	20.17
270	2.2	238.8	0.2500	-6.02	1.000	20.22
300	1.4	239.6	0.2500	-6.02	1.000	20.25
330	2.9	238.1	0.2025	-6.94	0.900	19.16

Ave El= 1.06 M HAAT= 239.94 M AMSL= 241.0

NAD 1983 to NAD 1927 Conversion:

	<u>Latitude</u>	<u>Longitude</u>
NAD 27 datum values:	25 46 19.94310	80 11 19.92886
NAD 83 datum values:	25 46 21.30000	80 11 19.10000

Various Coordinate Conversion Calculations (NAD 1983):

Position Type	Lat Lon
Degrees Lat Long	25.7725833°, -080.1886389°
Degrees Minutes	25°46.35500', -080°11.31833'
Degrees Minutes Seconds	25°46'21.3000", -080°11'19.1000"
UTM	17R 581356mE 2850749mN
UTM centimeter	17R 581356.53mE 2850749.75mN
MGRS	17RNJ8135650749
Grid North	0.4°
GARS	200KR27
Maidenhead	EL95VS75IK70
GEOREF	G HKL48684635

Exhibit 6

Tabulation of Proposed Allocation

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

Red Highlighted Text denotes 47 C.F.R. Section 73.3517 Contingent Processing and a continuation of existing 47 C.F.R. Section 74.1204(c) Contour Overlap as requested in *Exhibit(s) 7b*.

Yellow Highlighted Text denotes the existence of multiple 47 C.F.R. Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Requests as included in *Exhibit 8*.

Zoo Communications, Llc											
REFERENCE	CH#	228D	-	93.5 MHz,	Pwr= 0.25 kW DA,	HAAT= 239.9 M,	COR= 241 M	DISPLAY DATES			
25 46 20.0 N.					Average Protected F(50-50)=	20.26 km		DATA 06-05-18			
80 11 20.0 W.					Standard Directional			SEARCH 06-05-18			
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)	
228D	W228BY	LIC DC		24.3	0.13	25 46 24.0	0.250		---Reference---		
Miami	FL			204.3	BLFT20130222ACK	80 11 18.0	156	156	Zoo Communications, Llc		
228D	W228BY	CP DV		0.0	0.00	25 46 20.0	0.250		---Reference---		
Miami	FL			0.0	BMPFT20170713AHW	80 11 20.0		241	Zoo Communications, Llc		
230C0	WMIA-FM	LIC DC		354.6	21.77	25 58 02.0	100.000	10.0	72.0	-7.4*<	-51.2*<
Miami Beach	FL			174.6	BLH20050225AAH	80 12 34.0	307	308	Clear Chan. B/casting Lice		
226C0	WFEZ	LIC DC		354.6	21.77	25 58 02.0	100.000	10.0	72.0	-7.4*<	-51.2*<
Miami	FL			174.6	BLH20050224ABN	80 12 34.0	307	308	Cox Radio, Inc.		
228C2	WZFL	LIC NCX		203.3	98.33	24 57 34.0	50.000	133.3	47.7	-50.3*<	0.2
Islamorada	FL			23.1	BLH20170214ABC	80 34 30.0	118	118	Zoo Communications, Llc		
228D	W228BV	CP DC		3.4	24.56	25 59 34.0	0.099	15.4	4.2	-10.1*<	-39.3*<
Fort Lauderdale	FL			183.4	BMPFT20170718ACM	80 10 27.0		264	Zoo Communications, Llc		
228D	W228BV	LIC DC		3.4	24.56	25 59 34.0	0.179	14.3	3.8	-8.9*<	-39.0*<
Fort Lauderdale	FL			183.5	BLFT20110729AKB	80 10 26.8	264	264	Zoo Communications, Llc		
228C3	WBGF	CP ZCX		335.5	109.14	26 39 54.0	15.500	104.7	37.9	-14.7*<	11.6
Belle Glade	FL			155.3	BPH20150910AAQ	80 38 38.0	128	131	Zoo Communications, Llc		
228C3	WBGF	LIC ZCX		332.2	114.65	26 41 00.0	15.500	107.9	39.3	-12.4*<	15.7
Belle Glade	FL			151.9	BLH20080411AAR	80 43 39.0	128	132	Zoo Communications, Llc		
282C1	WSFS	LIC CX		358.9	23.66	25 59 09.0	100.000	23.5	7.0	21.5R	2.2M
Miramar	FL			178.9	BLH20130819AFA	80 11 37.0	283	284	Entercom Miami License, Ll		
227D	W227CX	LIC C		5.6	114.77	26 47 58.5	0.132	20.1	13.4	75.4	72.9
North Palm Beach	FL			185.7	BLFT20151203ABO	80 04 32.5		153	Capstar Tx, Llc, As Debtor		
229D	W229DG	CP DC		5.6	114.77	26 47 58.5	0.250	19.2	12.8	76.4	73.5
West Palm Beach	FL			185.7	BNPFT20180327ACP	80 04 32.5		143	Wjwb Llc		
225D	1777279	APP DC		3.2	107.82	26 44 26.0	0.250	0.4	9.2	88.2	97.7
West Palm Beach	FL			183.2	BNPFT20180131AFM	80 07 44.0		140	Alpha Media Licensee Llc		
229C2	WXNX	LIC NCX		296.5	185.07	26 30 18.0	43.000	74.6	49.6	90.2	105.5
Sanibel	FL			115.7	BLH20100119ABA	81 51 14.0	145	146	Sun Broadcasting Inc		
225D	1781635	APP DC		5.7	110.55	26 45 42.0	0.250	0.9	11.0	90.5	98.6
West Palm Beach	FL			185.7	BNPFT20180509ABL	80 04 42.0		96	Alpha Media Licensee Llc		

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= East 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.
 < = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap

Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

Zoo Communications, LLC

FMCommander Single Allocation Study - 06-05-2018 - NED 03 SEC
W228BY.P's Overlaps (In= -50.3 km, Out= 0.18 km)

W228BY.P CH 228 D DA
Lat= 25 46 20.0, Lng= 80 11 20.0
0.25 kW 239.9 m HAAT, 241 m COR
Prot.= 60 dBu, Intef.= 40 dBu

WZFL CH 228 C2 73.215 N BLH20170214ABC
Lat= 24 57 34.0, Lng= 80 34 30.0
50.0 kW 118 m HAAT, 118 m COR
Prot.= 60 dBu, Intef.= 40 dBu

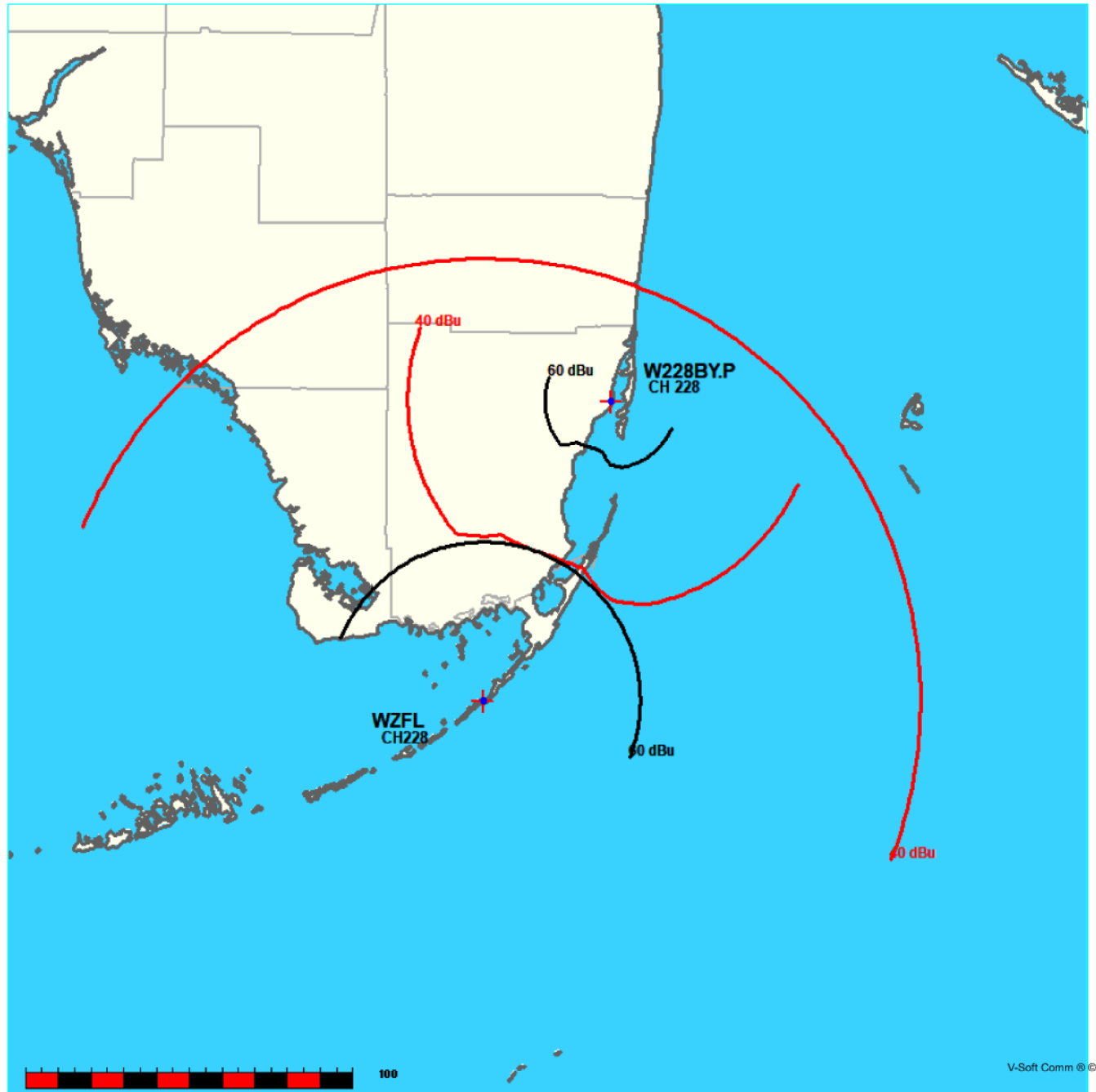


Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

06-05-2018

Terrain Data: NED 03 SEC

FMOver Analysis

W228BY.P

WZFL BLH20170214ABC

Channel = 228D
Max ERP = 0.25 kW
RCAMSL = 241 m
N. Lat. 25 46 20.0
W. Lng. 80 11 20.0
Protected
60 dBu

Channel = 228C2
Max ERP = 50 kW
RCAMSL = 118 m
N. Lat. 24 57 34.0
W. Lng. 80 34 30.0
Interfering
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
161.0	000.2500	0240.9	020.3	032.5	050.0000	0118.0	084.4	50.66*	48.89
162.0	000.2500	0240.8	020.3	032.3	050.0000	0118.0	084.2	50.74*	49.16
163.0	000.2500	0240.7	020.3	032.2	050.0000	0118.0	083.9	50.82*	49.43
164.0	000.2500	0240.7	020.3	032.0	050.0000	0118.0	083.6	50.89*	49.70
165.0	000.2500	0240.8	020.3	031.8	050.0000	0118.0	083.4	50.97*	49.96
166.0	000.2500	0240.7	020.3	031.7	050.0000	0118.0	083.1	51.04*	50.21
167.0	000.2500	0240.8	020.3	031.5	050.0000	0118.0	082.9	51.12*	50.47
168.0	000.2500	0240.9	020.3	031.3	050.0000	0118.0	082.6	51.19*	50.72
169.0	000.2500	0240.9	020.3	031.1	050.0000	0118.0	082.4	51.26*	50.96
170.0	000.2500	0240.9	020.3	031.0	050.0000	0118.0	082.1	51.33*	51.19
171.0	000.2500	0241.0	020.3	030.8	050.0000	0118.0	081.9	51.39*	51.43
172.0	000.2500	0241.0	020.3	030.6	050.0000	0118.0	081.7	51.46*	51.65
173.0	000.2500	0241.0	020.3	030.4	050.0000	0118.0	081.5	51.52*	51.87
174.0	000.2500	0241.0	020.3	030.2	050.0000	0118.0	081.2	51.58*	52.08
175.0	000.2500	0241.0	020.3	030.0	050.0000	0118.0	081.0	51.64*	52.29
176.0	000.2500	0241.0	020.3	029.8	050.0000	0118.0	080.8	51.70*	52.49
177.0	000.2500	0241.0	020.3	029.6	050.0000	0118.0	080.6	51.76*	52.69
178.0	000.2500	0241.0	020.3	029.3	050.0000	0118.0	080.4	51.81*	52.88
179.0	000.2500	0241.0	020.3	029.1	050.0000	0118.0	080.3	51.86*	53.06
180.0	000.2500	0241.0	020.3	028.9	050.0000	0118.0	080.1	51.91*	53.23
181.0	000.2500	0241.0	020.3	028.7	050.0000	0118.0	079.9	51.96*	53.40
182.0	000.2500	0241.0	020.3	028.5	050.0000	0118.0	079.8	52.01*	53.56
183.0	000.2500	0241.0	020.3	028.2	050.0000	0118.0	079.6	52.06*	53.72
184.0	000.2500	0241.0	020.3	028.0	050.0000	0118.0	079.5	52.10*	53.87
185.0	000.2500	0241.0	020.3	027.8	050.0000	0118.0	079.3	52.14*	54.01
186.0	000.2500	0241.0	020.3	027.5	050.0000	0118.0	079.2	52.18*	54.15
187.0	000.2500	0241.0	020.3	027.3	050.0000	0118.0	079.1	52.22*	54.27
188.0	000.2500	0241.0	020.3	027.0	050.0000	0118.0	078.9	52.25*	54.39
189.0	000.2500	0241.0	020.3	026.8	050.0000	0118.0	078.8	52.28*	54.51
190.0	000.2500	0241.0	020.3	026.6	050.0000	0118.0	078.7	52.31*	54.61
191.0	000.2500	0241.0	020.3	026.3	050.0000	0118.0	078.6	52.34*	54.71
192.0	000.2500	0241.0	020.3	026.1	050.0000	0118.0	078.5	52.37*	54.80
193.0	000.2500	0241.0	020.3	025.8	050.0000	0118.0	078.4	52.39*	54.88

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)	
194.0	000.2500	0241.0	020.3	025.6	050.0000	0118.0	078.4	52.42*	54.96
195.0	000.2500	0241.0	020.3	025.3	050.0000	0118.0	078.3	52.44*	55.03
196.0	000.2500	0241.0	020.3	025.0	050.0000	0118.0	078.2	52.45*	55.09
197.0	000.2500	0241.0	020.3	024.8	050.0000	0118.0	078.2	52.47*	55.14
198.0	000.2500	0241.0	020.3	024.5	050.0000	0118.0	078.1	52.48*	55.19
199.0	000.2500	0241.0	020.3	024.3	050.0000	0118.0	078.1	52.49*	55.22
200.0	000.2500	0241.0	020.3	024.0	050.0000	0118.0	078.1	52.50*	55.25
201.0	000.2500	0241.0	020.3	023.8	050.0000	0118.0	078.1	52.51*	55.28
202.0	000.2500	0241.0	020.3	023.5	050.0000	0118.0	078.0	52.51*	55.29
203.0	000.2500	0241.0	020.3	023.2	050.0000	0118.0	078.0	52.51*	55.30
204.0	000.2500	0241.0	020.3	023.0	050.0000	0118.0	078.0	52.51*	55.29
205.0	000.2500	0241.0	020.3	022.7	050.0000	0118.0	078.0	52.51*	55.29
206.0	000.2500	0241.0	020.3	022.5	050.0000	0118.0	078.1	52.51*	55.27
207.0	000.2500	0241.0	020.3	022.2	050.0000	0118.0	078.1	52.50*	55.24
208.0	000.2500	0241.0	020.3	021.9	050.0000	0118.0	078.1	52.49*	55.21
209.0	000.2500	0241.0	020.3	021.7	050.0000	0118.0	078.2	52.48*	55.17
210.0	000.2500	0241.0	020.3	021.4	050.0000	0118.0	078.2	52.46*	55.12
211.0	000.2500	0240.9	020.3	021.2	050.0000	0118.0	078.3	52.45*	55.06
212.0	000.2500	0240.9	020.3	020.9	050.0000	0118.0	078.3	52.43*	55.00
213.0	000.2500	0240.8	020.3	020.7	050.0000	0118.0	078.4	52.41*	54.93
214.0	000.2500	0240.7	020.3	020.4	050.0000	0118.0	078.5	52.38*	54.84
215.0	000.2500	0240.7	020.3	020.2	050.0000	0118.0	078.6	52.36*	54.75
216.0	000.2500	0240.4	020.3	019.9	050.0000	0118.0	078.7	52.33*	54.65
217.0	000.2500	0240.1	020.3	019.7	050.0000	0118.0	078.8	52.29*	54.54
218.0	000.2500	0239.9	020.3	019.4	050.0000	0118.0	078.9	52.26*	54.42
219.0	000.2500	0239.9	020.3	019.2	050.0000	0118.0	079.0	52.22*	54.30
220.0	000.2500	0239.6	020.3	018.9	050.0000	0118.0	079.2	52.19*	54.17
221.0	000.2500	0239.4	020.2	018.7	050.0000	0118.0	079.3	52.15*	54.04
222.0	000.2500	0239.2	020.2	018.5	050.0000	0118.0	079.4	52.10*	53.89
223.0	000.2500	0239.0	020.2	018.2	050.0000	0118.0	079.6	52.06*	53.74
224.0	000.2500	0238.4	020.2	018.0	050.0000	0118.0	079.8	52.01*	53.57
225.0	000.2500	0238.2	020.2	017.8	050.0000	0118.0	079.9	51.96*	53.40
226.0	000.2500	0237.7	020.2	017.6	050.0000	0118.0	080.1	51.91*	53.22
227.0	000.2500	0237.5	020.2	017.4	050.0000	0118.0	080.3	51.86*	53.04
228.0	000.2500	0237.7	020.2	017.1	050.0000	0118.0	080.5	51.81*	52.87
229.0	000.2500	0238.0	020.2	016.9	050.0000	0118.0	080.6	51.76*	52.70
230.0	000.2500	0238.1	020.2	016.7	050.0000	0118.0	080.8	51.71*	52.52
231.0	000.2500	0238.0	020.2	016.5	050.0000	0118.0	081.0	51.65*	52.32
232.0	000.2500	0238.0	020.2	016.3	050.0000	0118.0	081.2	51.59*	52.12
233.0	000.2500	0238.1	020.2	016.1	050.0000	0118.0	081.4	51.53*	51.91
234.0	000.2500	0238.2	020.2	015.9	050.0000	0118.0	081.6	51.47*	51.70
235.0	000.2500	0238.1	020.2	015.7	050.0000	0118.0	081.8	51.41*	51.48
236.0	000.2500	0238.2	020.2	015.5	050.0000	0118.0	082.1	51.34*	51.26
237.0	000.2500	0238.1	020.2	015.3	050.0000	0118.0	082.3	51.28*	51.02
238.0	000.2500	0237.9	020.2	015.2	050.0000	0118.0	082.5	51.21*	50.78

Exhibit 7a

Contour Protection Studies Toward Select Allocation Concern(s)

06-05-2018 Terrain Data: NED 03 SEC FMOver Analysis

WZFL BLH20170214ABC

W228BY.P

Channel = 228C2
 Max ERP = 50 kW
 RCAMSL = 118 m
 N. Lat. 24 57 34.0
 W. Lng. 80 34 30.0
 Protected
 60 dBu

Channel = 228D
 Max ERP = 0.25 kW
 RCAMSL = 241 m
 N. Lat. 25 46 20.0
 W. Lng. 80 11 20.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
338.0	050.0000	0118.0	047.7	230.9	000.2500	0238.0	073.0	36.24	
339.0	050.0000	0118.0	047.7	230.7	000.2500	0238.0	072.2	36.50	
340.0	050.0000	0118.0	047.7	230.5	000.2500	0238.1	071.4	36.77	
341.0	050.0000	0118.0	047.7	230.2	000.2500	0238.1	070.6	37.03	
342.0	050.0000	0118.0	047.7	230.0	000.2500	0238.1	069.9	37.29	
343.0	050.0000	0118.0	047.7	229.7	000.2454	0238.1	069.1	37.47	
344.0	050.0000	0118.0	047.7	229.5	000.2405	0238.1	068.3	37.64	
345.0	050.0000	0118.0	047.7	229.2	000.2354	0238.0	067.6	37.80	
346.0	050.0000	0118.0	047.7	228.8	000.2300	0237.9	066.8	37.95	
347.0	050.0000	0118.0	047.7	228.5	000.2244	0237.9	066.1	38.10	
348.0	050.0000	0118.0	047.7	228.1	000.2185	0237.8	065.4	38.23	
349.0	050.0000	0118.0	047.7	227.8	000.2124	0237.6	064.7	38.35	
350.0	050.0000	0118.0	047.7	227.4	000.2061	0237.5	064.0	38.46	
351.0	050.0000	0118.0	047.7	227.0	000.1996	0237.5	063.3	38.56	
352.0	050.0000	0118.0	047.7	226.5	000.1929	0237.5	062.6	38.66	
353.0	050.0000	0118.0	047.7	226.1	000.1860	0237.6	061.9	38.75	
354.0	050.0000	0118.0	047.7	225.6	000.1789	0237.9	061.3	38.83	
355.0	050.0000	0118.0	047.7	225.1	000.1716	0238.2	060.6	38.91	
356.0	050.0000	0118.0	047.7	224.6	000.1642	0238.3	060.0	38.96	
357.0	050.0000	0118.0	047.7	224.0	000.1566	0238.4	059.4	38.99	
358.0	050.0000	0118.0	047.7	223.5	000.1490	0238.7	058.8	39.02	
359.0	050.0000	0118.0	047.7	222.9	000.1412	0239.0	058.2	39.03	
000.0	050.0000	0118.0	047.7	222.3	000.1334	0239.2	057.6	39.01	
001.0	050.0000	0118.0	047.7	221.7	000.1255	0239.3	057.1	38.97	
002.0	050.0000	0118.0	047.7	221.0	000.1177	0239.4	056.5	38.90	
003.0	050.0000	0118.0	047.7	220.4	000.1098	0239.5	056.0	38.81	
004.0	050.0000	0118.0	047.7	219.7	000.1051	0239.7	055.5	38.82	
005.0	050.0000	0118.0	047.7	219.0	000.1039	0239.9	055.1	38.97	
006.0	050.0000	0118.0	047.7	218.2	000.1028	0239.9	054.6	39.11	

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)
007.0	050.0000	0118.0	047.7	217.5	000.1016	0240.0	054.2	39.23
008.0	050.0000	0118.0	047.7	216.7	000.1004	0240.2	053.8	39.35
009.0	050.0000	0118.0	047.7	215.9	000.0991	0240.4	053.4	39.46
010.0	050.0000	0118.0	047.7	215.1	000.0978	0240.7	053.0	39.56
011.0	050.0000	0118.0	047.7	214.3	000.0966	0240.7	052.7	39.65
012.0	050.0000	0118.0	047.7	213.5	000.0953	0240.8	052.4	39.72
013.0	050.0000	0118.0	047.7	212.6	000.0939	0240.9	052.1	39.78
014.0	050.0000	0118.0	047.7	211.7	000.0926	0240.9	051.8	39.83
015.0	050.0000	0118.0	047.7	210.8	000.0913	0241.0	051.6	39.86
016.0	050.0000	0118.0	047.7	209.9	000.0900	0241.0	051.4	39.89
017.0	050.0000	0118.0	047.7	209.0	000.0894	0241.0	051.2	39.94
018.0	050.0000	0118.0	047.7	208.1	000.0886	0241.0	051.0	39.96
019.0	050.0000	0118.0	047.7	207.2	000.0880	0241.0	050.9	39.98
020.0	050.0000	0118.0	047.7	206.3	000.0873	0241.0	050.8	39.99
021.0	050.0000	0118.0	047.7	205.3	000.0864	0241.0	050.7	39.98
022.0	050.0000	0118.0	047.7	204.4	000.0858	0241.0	050.7	39.96
023.0	050.0000	0118.0	047.7	203.5	000.0851	0241.0	050.7	39.93
024.0	050.0000	0118.0	047.7	202.5	000.0844	0241.0	050.7	39.90
025.0	050.0000	0118.0	047.7	201.6	000.0837	0241.0	050.7	39.85
026.0	050.0000	0118.0	047.7	200.6	000.0830	0241.0	050.8	39.78
027.0	050.0000	0118.0	047.7	199.7	000.0828	0241.0	050.9	39.73
028.0	050.0000	0118.0	047.7	198.8	000.0834	0241.0	051.0	39.71
029.0	050.0000	0118.0	047.7	197.9	000.0842	0241.0	051.1	39.69
030.0	050.0000	0118.0	047.7	196.9	000.0847	0241.0	051.3	39.65
031.0	050.0000	0118.0	047.7	196.0	000.0855	0241.0	051.5	39.61
032.0	050.0000	0118.0	047.7	195.2	000.0860	0241.0	051.7	39.54
033.0	050.0000	0118.0	047.7	194.3	000.0868	0241.0	052.0	39.47
034.0	050.0000	0118.0	047.7	193.4	000.0875	0241.0	052.3	39.40
035.0	050.0000	0118.0	047.7	192.6	000.0882	0241.0	052.6	39.30
036.0	050.0000	0118.0	047.7	191.8	000.0887	0241.0	052.9	39.19
037.0	050.0000	0117.9	047.7	190.9	000.0894	0241.0	053.3	39.08
038.0	050.0000	0117.8	047.7	190.2	000.0899	0241.0	053.7	38.94
039.0	050.0000	0117.7	047.6	189.4	000.0956	0241.0	054.1	39.04
040.0	050.0000	0117.8	047.6	188.6	000.1027	0241.0	054.5	39.18
041.0	050.0000	0117.4	047.6	187.9	000.1096	0241.0	055.0	39.27
042.0	050.0000	0117.0	047.5	187.3	000.1164	0241.0	055.5	39.32
043.0	050.0000	0117.6	047.6	186.5	000.1241	0241.0	055.9	39.43
044.0	050.0000	0117.5	047.6	185.8	000.1313	0241.0	056.4	39.47
045.0	050.0000	0117.4	047.6	185.2	000.1383	0241.0	057.0	39.48
046.0	050.0000	0117.3	047.6	184.6	000.1453	0241.0	057.5	39.48
047.0	050.0000	0117.4	047.6	184.0	000.1526	0241.0	058.1	39.48
048.0	050.0000	0117.7	047.6	183.3	000.1598	0241.0	058.6	39.47
049.0	050.0000	0117.8	047.7	182.8	000.1668	0241.0	059.2	39.43
050.0	050.0000	0117.9	047.7	182.2	000.1737	0241.0	059.8	39.37
051.0	050.0000	0117.9	047.7	181.7	000.1803	0241.0	060.4	39.29

Exhibit 7b(1) - Licensed to Licensed Operations
47 C.F.R. Section 73.3517 Contingent Filing Request
47 C.F.R. Section 74.1204(c) Existing Contour Overlap Request

**18.14 km² of Given Overlap
from W228BY.L to W228BV.L**

Broward

W228BV.L
+

60 dBμ F(50:50)

40 dBμ F(50:10)

40 dBμ F(50:10)

60 dBμ F(50:50)

W228BY.L
+

W228BV.L
Fort Lauderdale, FL
Pending License
Facility ID: 138576
Latitude: 25-59-34 N
Longitude: 080-10-27 W
ERP: 0.099 kW
Channel: 228D (93.5 MHz)
AMSL Height: 264.0 m
Pattern: Directional

W228BY.L
Miami, FL
BLFT20130222ACK
Facility ID: 140483
Latitude: 25-46-24 N
Longitude: 080-11-18 W
ERP: 0.25 kW
Channel: 228D (93.5 MHz)
AMSL Height: 156.0 m
Horiz. Pattern: Directional

NED 03 SEC Terrain Database
US Census 2010 PL Database

Scale 1:500,000

0 8 16 24 km

V-Soft Communications LLC ©

Miami-Dade

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

Exhibit 7b(1)

Contour Protection Studies Toward Select Allocation Concern(s)

06-19-2018

Terrain Data: NED 03 SEC

FMOver Analysis

W228BY.L (License)

W228BV.L (Pending License)

Channel = 228D
Max ERP = 0.25 kW
RCAMSL = 156 m
N. Lat. 25 46 24.0
W. Lng. 80 11 18.0
Protected
60 dBu

Channel = 228D
Max ERP = 0.099 kW
RCAMSL = 264 m
N. Lat. 25 59 34.0
W. Lng. 80 10 27.0
Interfering
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
281.0	000.2500	0154.2	016.2	219.0	000.0004	0262.2	027.4	27.87	
282.0	000.2500	0154.2	016.2	219.3	000.0004	0262.2	027.2	28.04	
283.0	000.2500	0154.0	016.2	219.6	000.0004	0262.2	026.9	28.21	
284.0	000.2500	0154.1	016.2	219.8	000.0004	0262.2	026.7	28.38	
285.0	000.2500	0154.1	016.2	220.1	000.0004	0262.2	026.4	28.73	
286.0	000.2500	0154.0	016.2	220.4	000.0004	0262.2	026.2	29.30	
287.0	000.2500	0154.2	016.2	220.6	000.0004	0262.3	025.9	29.89	
288.0	000.2500	0154.4	016.2	220.9	000.0005	0262.3	025.7	30.46	
289.0	000.2500	0154.5	016.2	221.2	000.0005	0262.3	025.4	31.01	
290.0	000.2500	0154.7	016.2	221.4	000.0006	0262.2	025.1	31.54	
291.0	000.2500	0154.6	016.2	221.7	000.0006	0262.2	024.9	32.02	
292.0	000.2500	0154.6	016.2	221.9	000.0007	0262.2	024.6	32.48	
293.0	000.2500	0154.6	016.2	222.1	000.0007	0262.2	024.4	32.94	
294.0	000.2500	0154.6	016.2	222.3	000.0007	0262.2	024.1	33.39	
295.0	000.2500	0154.7	016.2	222.5	000.0008	0262.2	023.8	33.84	
296.0	000.2500	0154.7	016.2	222.7	000.0008	0262.2	023.5	34.27	
297.0	000.2500	0154.7	016.2	222.9	000.0009	0262.2	023.3	34.69	
298.0	000.2500	0154.7	016.2	223.1	000.0009	0262.2	023.0	35.08	
299.0	000.2500	0154.6	016.2	223.3	000.0009	0262.3	022.7	35.46	
300.0	000.2500	0154.5	016.2	223.4	000.0010	0262.2	022.5	35.83	
301.0	000.2500	0154.5	016.2	223.6	000.0010	0262.2	022.2	36.21	
302.0	000.2500	0154.4	016.2	223.7	000.0011	0262.2	021.9	36.56	
303.0	000.2500	0154.3	016.2	223.9	000.0011	0262.2	021.6	36.90	
304.0	000.2500	0154.3	016.2	224.0	000.0011	0262.2	021.3	37.23	
305.0	000.2500	0154.2	016.2	224.1	000.0011	0262.2	021.1	37.57	
306.0	000.2500	0154.2	016.2	224.2	000.0012	0262.2	020.8	37.89	
307.0	000.2500	0154.2	016.2	224.3	000.0012	0262.3	020.5	38.20	
308.0	000.2500	0154.2	016.2	224.4	000.0012	0262.3	020.2	38.53	

Exhibit 7b(1)

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)
309.0	000.2500	0154.1	016.2	224.5	000.0012	0262.3	019.9	38.81
310.0	000.2500	0154.1	016.2	224.6	000.0013	0262.3	019.7	39.09
311.0	000.2357	0154.0	015.9	223.8	000.0011	0262.2	019.4	38.66
312.0	000.2214	0154.0	015.6	223.0	000.0009	0262.2	019.1	38.08
313.0	000.2079	0154.0	015.3	222.2	000.0007	0262.2	018.8	37.41
314.0	000.1949	0154.0	015.1	221.4	000.0006	0262.2	018.6	36.60
315.0	000.1823	0154.0	014.8	220.5	000.0004	0262.3	018.3	35.58
316.0	000.1697	0154.0	014.5	219.6	000.0004	0262.2	018.1	34.93
317.0	000.1580	0154.1	014.3	218.7	000.0004	0262.1	017.9	35.11
318.0	000.1467	0154.0	014.0	217.7	000.0004	0262.2	017.7	35.28
319.0	000.1354	0153.9	013.7	216.6	000.0004	0262.2	017.5	35.43
320.0	000.1250	0153.8	013.5	215.5	000.0004	0262.3	017.3	35.57
321.0	000.1053	0153.6	012.9	213.6	000.0004	0262.3	017.2	35.63
322.0	000.0873	0153.6	012.3	211.5	000.0004	0262.4	017.2	35.65
323.0	000.0708	0153.6	011.7	209.4	000.0004	0262.2	017.3	35.62
324.0	000.0562	0153.5	011.1	207.2	000.0004	0261.9	017.4	35.53
325.0	000.0433	0153.4	010.4	204.9	000.0004	0261.9	017.5	35.39
326.0	000.0320	0153.3	009.7	202.6	000.0004	0261.5	017.8	35.18
327.0	000.0225	0153.2	008.8	200.1	000.0004	0261.7	018.1	34.90
328.0	000.0145	0153.2	007.9	197.5	000.0004	0261.6	018.6	34.50
329.0	000.0084	0153.1	006.9	195.0	000.0004	0261.6	019.2	34.02
330.0	000.0039	0153.0	005.6	192.3	000.0004	0261.9	020.0	33.39
331.0	000.0039	0153.0	005.6	192.1	000.0004	0262.0	019.9	33.44
332.0	000.0039	0153.0	005.6	191.8	000.0004	0262.0	019.8	33.50
333.0	000.0039	0153.1	005.6	191.6	000.0004	0262.1	019.8	33.55
334.0	000.0039	0153.0	005.6	191.4	000.0004	0262.1	019.7	33.60
335.0	000.0039	0153.1	005.6	191.2	000.0004	0262.0	019.6	33.64
336.0	000.0039	0153.2	005.7	190.9	000.0004	0262.0	019.6	33.69
337.0	000.0039	0153.4	005.7	190.7	000.0004	0262.0	019.5	33.74
338.0	000.0039	0153.4	005.7	190.5	000.0004	0262.0	019.5	33.78
339.0	000.0039	0153.3	005.7	190.2	000.0004	0262.0	019.4	33.82
340.0	000.0039	0153.2	005.7	190.0	000.0004	0262.0	019.4	33.86
341.0	000.0039	0153.2	005.7	189.7	000.0004	0262.0	019.3	33.90
342.0	000.0039	0153.1	005.7	189.4	000.0004	0262.0	019.3	33.94
343.0	000.0039	0153.1	005.7	189.2	000.0004	0262.0	019.2	33.97
344.0	000.0039	0152.9	005.6	188.9	000.0004	0262.0	019.2	34.01
345.0	000.0039	0152.9	005.6	188.6	000.0004	0262.0	019.2	34.04
346.0	000.0039	0152.7	005.6	188.4	000.0004	0262.0	019.1	34.07
347.0	000.0039	0152.8	005.6	188.1	000.0004	0262.1	019.1	34.10
348.0	000.0039	0152.8	005.6	187.8	000.0004	0262.1	019.1	34.13
349.0	000.0039	0152.7	005.6	187.5	000.0004	0262.1	019.0	34.15
350.0	000.0039	0152.7	005.6	187.3	000.0004	0262.1	019.0	34.18
351.0	000.0039	0152.7	005.6	187.0	000.0004	0262.1	019.0	34.20
352.0	000.0039	0152.9	005.6	186.7	000.0004	0262.1	018.9	34.23
353.0	000.0039	0153.0	005.6	186.4	000.0004	0262.0	018.9	34.25
354.0	000.0039	0153.2	005.7	186.1	000.0004	0262.1	018.9	34.27
355.0	000.0039	0153.3	005.7	185.8	000.0004	0262.1	018.9	34.28
356.0	000.0039	0153.5	005.7	185.5	000.0004	0262.0	018.8	34.30
357.0	000.0039	0153.7	005.7	185.2	000.0004	0262.0	018.8	34.32
358.0	000.0039	0153.8	005.7	184.9	000.0004	0262.0	018.8	34.33
359.0	000.0039	0153.9	005.7	184.6	000.0004	0261.9	018.8	34.34

Exhibit 7b(1)
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)
000.0	000.0039	0153.9	005.7	184.3	000.0004	0261.9	018.8	34.34
001.0	000.0039	0153.9	005.7	184.0	000.0004	0261.9	018.8	34.35
002.0	000.0039	0154.0	005.7	183.7	000.0004	0261.9	018.8	34.35
003.0	000.0039	0154.1	005.7	183.4	000.0004	0261.8	018.8	34.35
004.0	000.0039	0154.2	005.7	183.1	000.0004	0261.9	018.8	34.36
005.0	000.0039	0154.4	005.7	182.8	000.0004	0261.9	018.8	34.36
006.0	000.0039	0154.5	005.7	182.5	000.0004	0261.9	018.8	34.35
007.0	000.0039	0154.7	005.7	182.2	000.0004	0261.9	018.8	34.35
008.0	000.0039	0155.0	005.7	181.9	000.0004	0261.9	018.8	34.35
009.0	000.0039	0155.3	005.7	181.6	000.0004	0261.9	018.8	34.34
010.0	000.0039	0155.4	005.7	181.3	000.0004	0262.0	018.8	34.34
011.0	000.0039	0155.5	005.7	181.0	000.0004	0262.0	018.8	34.33
012.0	000.0039	0155.7	005.7	180.7	000.0004	0262.0	018.8	34.31
013.0	000.0039	0155.4	005.7	180.4	000.0004	0262.0	018.9	34.29
014.0	000.0039	0155.7	005.7	180.1	000.0004	0262.1	018.9	34.28
015.0	000.0039	0155.9	005.7	179.8	000.0004	0262.1	018.9	34.26
016.0	000.0039	0155.9	005.7	179.5	000.0004	0262.1	018.9	34.24
017.0	000.0039	0155.9	005.7	179.2	000.0004	0262.2	018.9	34.22
018.0	000.0039	0155.9	005.7	179.0	000.0004	0262.3	019.0	34.20
019.0	000.0039	0155.9	005.7	178.7	000.0004	0262.4	019.0	34.17
020.0	000.0039	0155.9	005.7	178.4	000.0004	0262.4	019.0	34.14
021.0	000.0084	0155.9	006.9	176.6	000.0004	0262.6	018.0	35.04
022.0	000.0145	0155.8	007.9	174.8	000.0004	0262.6	017.1	35.76
023.0	000.0225	0155.8	008.9	172.7	000.0004	0262.6	016.3	36.41
024.0	000.0320	0155.6	009.7	170.7	000.0004	0262.6	015.7	36.93
025.0	000.0433	0155.7	010.5	168.6	000.0004	0262.6	015.2	37.36
026.0	000.0562	0155.8	011.2	166.4	000.0004	0262.4	014.8	37.58
027.0	000.0708	0155.8	011.8	164.1	000.0004	0262.8	014.4	38.01
028.0	000.0873	0155.8	012.4	161.8	000.0004	0263.1	014.1	38.38
029.0	000.1053	0155.8	013.0	159.5	000.0004	0263.3	013.9	38.67
030.0	000.1250	0155.8	013.6	157.1	000.0004	0263.4	013.7	38.89
031.0	000.1354	0155.8	013.8	155.5	000.0004	0263.4	013.8	38.85
032.0	000.1467	0155.9	014.1	154.0	000.0004	0263.5	013.8	38.79
033.0	000.1580	0155.9	014.4	152.5	000.0004	0263.6	013.9	38.70
034.0	000.1697	0155.9	014.7	151.1	000.0004	0263.7	014.0	38.58
035.0	000.1823	0155.9	014.9	149.6	000.0004	0263.7	014.1	38.43
036.0	000.1949	0155.9	015.2	148.2	000.0004	0263.7	014.2	38.26
037.0	000.2079	0155.9	015.5	146.8	000.0004	0263.7	014.4	38.07
038.0	000.2214	0155.9	015.7	145.4	000.0004	0263.6	014.6	37.86
039.0	000.2357	0155.9	016.0	144.1	000.0004	0263.6	014.8	37.64
040.0	000.2500	0155.9	016.3	142.8	000.0004	0263.5	015.0	37.39
041.0	000.2500	0155.9	016.3	142.6	000.0004	0263.5	015.2	37.35
042.0	000.2500	0155.9	016.3	142.4	000.0004	0263.5	015.5	37.12
043.0	000.2500	0155.9	016.3	142.2	000.0004	0263.5	015.8	36.88
044.0	000.2500	0155.9	016.3	142.1	000.0004	0263.5	016.1	36.64
045.0	000.2500	0155.9	016.3	141.9	000.0004	0263.6	016.4	36.40
046.0	000.2500	0155.8	016.3	141.9	000.0004	0263.6	016.7	36.17
047.0	000.2500	0155.8	016.3	141.8	000.0004	0263.6	016.9	35.93
048.0	000.2500	0155.7	016.3	141.7	000.0004	0263.6	017.2	35.69
049.0	000.2500	0155.7	016.3	141.7	000.0004	0263.6	017.5	35.46
050.0	000.2500	0155.7	016.3	141.6	000.0004	0263.6	017.8	35.22

Exhibit 7b(1)

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	000.2500	0155.7	016.3	141.6	000.0004	0263.6	018.1	34.98
052.0	000.2500	0155.8	016.3	141.6	000.0004	0263.6	018.4	34.75
053.0	000.2500	0155.8	016.3	141.6	000.0004	0263.6	018.6	34.52
054.0	000.2500	0155.9	016.3	141.6	000.0004	0263.6	018.9	34.28
055.0	000.2500	0155.8	016.3	141.7	000.0004	0263.6	019.2	34.05
056.0	000.2500	0155.8	016.3	141.7	000.0004	0263.6	019.5	33.82
057.0	000.2500	0155.8	016.3	141.8	000.0004	0263.6	019.8	33.59
058.0	000.2500	0155.8	016.3	141.9	000.0004	0263.6	020.1	33.36
059.0	000.2500	0155.8	016.3	142.0	000.0004	0263.6	020.3	33.14
060.0	000.2500	0155.8	016.3	142.1	000.0004	0263.5	020.6	32.91
061.0	000.2500	0155.8	016.3	142.2	000.0004	0263.5	020.9	32.69
062.0	000.2500	0155.8	016.3	142.3	000.0004	0263.5	021.2	32.47
063.0	000.2500	0155.8	016.3	142.4	000.0004	0263.5	021.5	32.25
064.0	000.2500	0155.8	016.3	142.6	000.0004	0263.5	021.7	32.03
065.0	000.2500	0155.9	016.3	142.7	000.0004	0263.5	022.0	31.81
066.0	000.2500	0155.9	016.3	142.9	000.0004	0263.5	022.3	31.60
067.0	000.2500	0155.9	016.3	143.1	000.0004	0263.5	022.6	31.39
068.0	000.2500	0155.9	016.3	143.2	000.0004	0263.6	022.8	31.18
069.0	000.2500	0155.9	016.3	143.4	000.0004	0263.6	023.1	30.97
070.0	000.2500	0155.9	016.3	143.6	000.0004	0263.6	023.4	30.77
071.0	000.2500	0155.9	016.3	143.8	000.0004	0263.6	023.7	30.56
072.0	000.2500	0155.9	016.3	144.0	000.0004	0263.6	023.9	30.36
073.0	000.2500	0155.9	016.3	144.2	000.0004	0263.6	024.2	30.17
074.0	000.2500	0155.9	016.3	144.5	000.0004	0263.6	024.5	29.97
075.0	000.2500	0155.9	016.3	144.7	000.0004	0263.6	024.7	29.78
076.0	000.2500	0155.9	016.3	144.9	000.0004	0263.6	025.0	29.59
077.0	000.2500	0155.9	016.3	145.1	000.0004	0263.6	025.3	29.40
078.0	000.2500	0155.9	016.3	145.4	000.0004	0263.6	025.5	29.21
079.0	000.2500	0155.9	016.3	145.6	000.0004	0263.6	025.8	29.03
080.0	000.2500	0155.9	016.3	145.9	000.0004	0263.7	026.1	28.85
081.0	000.2500	0155.9	016.3	146.1	000.0004	0263.7	026.3	28.67
082.0	000.2500	0155.9	016.3	146.4	000.0004	0263.7	026.6	28.50
083.0	000.2500	0155.9	016.3	146.7	000.0004	0263.7	026.8	28.33
084.0	000.2500	0155.9	016.3	146.9	000.0004	0263.7	027.1	28.16
085.0	000.2500	0155.9	016.3	147.2	000.0004	0263.7	027.3	27.99
086.0	000.2500	0155.9	016.3	147.5	000.0004	0263.7	027.6	27.83
087.0	000.2500	0155.9	016.3	147.8	000.0004	0263.7	027.8	27.67
088.0	000.2500	0155.9	016.3	148.1	000.0004	0263.7	028.1	27.51
089.0	000.2500	0155.9	016.3	148.4	000.0004	0263.7	028.3	27.36
090.0	000.2500	0155.9	016.3	148.7	000.0004	0263.7	028.6	27.21
091.0	000.2500	0155.9	016.3	149.0	000.0004	0263.7	028.8	27.06
092.0	000.2500	0155.9	016.3	149.3	000.0004	0263.7	029.0	26.91

Exhibit 7b(1)

Contour Protection Studies Toward Select Allocation Concern(s)

06-19-2018

Terrain Data: NED 03 SEC

FMOver Analysis

W228BV.L(Pending License)

W228BY.L(License)

Channel = 228D
 Max ERP = 0.099 kW
 RCAMSL = 264 m
 N. Lat. 25 59 34.0
 W. Lng. 80 10 27.0
 Protected
 60 dBu

Channel = 228D
 Max ERP = 0.25 kW
 RCAMSL = 156 m
 N. Lat. 25 46 24.0
 W. Lng. 80 11 18.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
093.0	000.0004	0263.9	003.3	011.0	000.0039	0155.5	024.7	35.69	
094.0	000.0004	0263.9	003.3	011.0	000.0039	0155.5	024.6	35.73	
095.0	000.0004	0263.9	003.3	011.0	000.0039	0155.5	024.6	35.77	
096.0	000.0004	0263.8	003.3	011.0	000.0039	0155.5	024.5	35.81	
097.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.5	35.85	
098.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.4	35.89	
099.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.3	35.94	
100.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.3	35.98	
101.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.2	36.02	
102.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.2	36.06	
103.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.1	36.10	
104.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.0	36.14	
105.0	000.0004	0263.8	003.3	011.1	000.0039	0155.5	024.0	36.19	
106.0	000.0004	0263.8	003.3	011.0	000.0039	0155.5	023.9	36.23	
107.0	000.0004	0263.7	003.3	011.0	000.0039	0155.5	023.9	36.27	
108.0	000.0004	0263.7	003.3	011.0	000.0039	0155.5	023.8	36.31	
109.0	000.0004	0263.8	003.3	011.0	000.0039	0155.5	023.8	36.35	
110.0	000.0004	0263.8	003.3	011.0	000.0039	0155.5	023.7	36.39	
111.0	000.0004	0263.8	003.3	011.0	000.0039	0155.5	023.6	36.43	
112.0	000.0004	0263.8	003.3	010.9	000.0039	0155.4	023.6	36.47	
113.0	000.0004	0263.8	003.3	010.9	000.0039	0155.4	023.5	36.51	
114.0	000.0004	0263.8	003.3	010.9	000.0039	0155.4	023.5	36.56	
115.0	000.0004	0263.8	003.3	010.8	000.0039	0155.4	023.4	36.60	
116.0	000.0004	0263.7	003.3	010.8	000.0039	0155.4	023.4	36.64	
117.0	000.0004	0263.7	003.3	010.8	000.0039	0155.4	023.3	36.68	
118.0	000.0004	0263.7	003.3	010.7	000.0039	0155.4	023.3	36.72	
119.0	000.0004	0263.6	003.3	010.7	000.0039	0155.4	023.2	36.76	
120.0	000.0004	0263.6	003.3	010.6	000.0039	0155.4	023.1	36.80	
121.0	000.0004	0263.6	003.3	010.6	000.0039	0155.4	023.1	36.84	
122.0	000.0004	0263.6	003.3	010.5	000.0039	0155.4	023.0	36.88	
123.0	000.0004	0263.6	003.3	010.5	000.0039	0155.4	023.0	36.92	
124.0	000.0004	0263.5	003.3	010.4	000.0039	0155.4	022.9	36.96	
125.0	000.0004	0263.5	003.3	010.4	000.0039	0155.4	022.9	37.00	

Exhibit 7b(1)

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)
126.0	000.0004	0263.5	003.3	010.3	000.0039	0155.4	022.8	37.04
127.0	000.0004	0263.5	003.3	010.2	000.0039	0155.4	022.8	37.08
128.0	000.0004	0263.5	003.3	010.2	000.0039	0155.4	022.7	37.12
129.0	000.0004	0263.6	003.3	010.1	000.0039	0155.4	022.7	37.15
130.0	000.0004	0263.6	003.3	010.0	000.0039	0155.4	022.6	37.19
131.0	000.0004	0263.5	003.3	010.0	000.0039	0155.4	022.6	37.23
132.0	000.0004	0263.5	003.3	009.9	000.0039	0155.4	022.5	37.26
133.0	000.0004	0263.5	003.3	009.8	000.0039	0155.4	022.5	37.30
134.0	000.0004	0263.5	003.3	009.7	000.0039	0155.4	022.4	37.34
135.0	000.0004	0263.5	003.3	009.6	000.0039	0155.4	022.4	37.37
136.0	000.0004	0263.6	003.3	009.6	000.0039	0155.4	022.3	37.41
137.0	000.0004	0263.6	003.3	009.5	000.0039	0155.4	022.3	37.44
138.0	000.0004	0263.6	003.3	009.4	000.0039	0155.4	022.2	37.48
139.0	000.0004	0263.6	003.3	009.3	000.0039	0155.4	022.2	37.51
140.0	000.0004	0263.6	003.3	009.2	000.0039	0155.4	022.2	37.54
141.0	000.0004	0263.6	003.3	009.1	000.0039	0155.3	022.1	37.57
142.0	000.0004	0263.6	003.3	009.0	000.0039	0155.3	022.1	37.60
143.0	000.0004	0263.5	003.3	008.9	000.0039	0155.3	022.0	37.64
144.0	000.0004	0263.6	003.3	008.8	000.0039	0155.3	022.0	37.66
145.0	000.0004	0263.6	003.3	008.7	000.0039	0155.2	021.9	37.69
146.0	000.0004	0263.7	003.3	008.6	000.0039	0155.2	021.9	37.72
147.0	000.0004	0263.7	003.3	008.4	000.0039	0155.2	021.9	37.75
148.0	000.0004	0263.7	003.3	008.3	000.0039	0155.1	021.8	37.78
149.0	000.0004	0263.7	003.3	008.2	000.0039	0155.1	021.8	37.80
150.0	000.0004	0263.7	003.3	008.1	000.0039	0155.1	021.8	37.83
151.0	000.0004	0263.7	003.3	008.0	000.0039	0155.0	021.7	37.85
152.0	000.0004	0263.6	003.3	007.9	000.0039	0155.0	021.7	37.87
153.0	000.0004	0263.5	003.3	007.7	000.0039	0154.9	021.7	37.90
154.0	000.0004	0263.5	003.3	007.6	000.0039	0154.9	021.6	37.92
155.0	000.0004	0263.4	003.3	007.5	000.0039	0154.8	021.6	37.94
156.0	000.0004	0263.4	003.3	007.3	000.0039	0154.8	021.6	37.96
157.0	000.0004	0263.4	003.3	007.2	000.0039	0154.7	021.5	37.98
158.0	000.0004	0263.5	003.3	007.1	000.0039	0154.7	021.5	38.00
159.0	000.0004	0263.3	003.3	006.9	000.0039	0154.7	021.5	38.02
160.0	000.0004	0263.2	003.3	006.8	000.0039	0154.6	021.5	38.04
161.0	000.0004	0263.1	003.3	006.7	000.0039	0154.6	021.4	38.05
162.0	000.0004	0263.1	003.3	006.5	000.0039	0154.6	021.4	38.07
163.0	000.0004	0263.0	003.3	006.4	000.0039	0154.5	021.4	38.09
164.0	000.0004	0262.8	003.3	006.2	000.0039	0154.5	021.4	38.10
165.0	000.0004	0262.7	003.3	006.1	000.0039	0154.5	021.3	38.12
166.0	000.0004	0262.5	003.3	006.0	000.0039	0154.5	021.3	38.13
167.0	000.0004	0262.5	003.3	005.8	000.0039	0154.5	021.3	38.15
168.0	000.0004	0262.6	003.3	005.7	000.0039	0154.5	021.3	38.16
169.0	000.0004	0262.6	003.3	005.5	000.0039	0154.5	021.3	38.17
170.0	000.0004	0262.6	003.3	005.4	000.0039	0154.5	021.2	38.19
171.0	000.0004	0262.5	003.3	005.2	000.0039	0154.4	021.2	38.20
172.0	000.0004	0262.5	003.3	005.1	000.0039	0154.4	021.2	38.20
173.0	000.0004	0262.6	003.3	004.9	000.0039	0154.4	021.2	38.21
174.0	000.0004	0262.7	003.3	004.8	000.0039	0154.3	021.2	38.22
175.0	000.0004	0262.6	003.3	004.6	000.0039	0154.3	021.2	38.23
176.0	000.0004	0262.6	003.3	004.5	000.0039	0154.3	021.2	38.23

Exhibit 7b(1)
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)
177.0	000.0004	0262.5	003.3	004.3	000.0039	0154.3	021.2	38.24
178.0	000.0004	0262.4	003.3	004.1	000.0039	0154.2	021.2	38.24
179.0	000.0004	0262.3	003.3	004.0	000.0039	0154.2	021.2	38.24
180.0	000.0004	0262.1	003.3	003.8	000.0039	0154.2	021.2	38.24
181.0	000.0004	0262.0	003.3	003.7	000.0039	0154.2	021.1	38.24
182.0	000.0004	0261.9	003.3	003.5	000.0039	0154.2	021.1	38.25
183.0	000.0004	0261.9	003.3	003.4	000.0039	0154.2	021.1	38.25
184.0	000.0004	0261.9	003.3	003.2	000.0039	0154.1	021.1	38.24
185.0	000.0004	0262.0	003.3	003.1	000.0039	0154.1	021.1	38.24
186.0	000.0004	0262.1	003.3	002.9	000.0039	0154.1	021.1	38.24
187.0	000.0004	0262.1	003.3	002.7	000.0039	0154.1	021.2	38.23
188.0	000.0004	0262.1	003.3	002.6	000.0039	0154.1	021.2	38.23
189.0	000.0004	0262.0	003.3	002.4	000.0039	0154.0	021.2	38.22
190.0	000.0004	0262.0	003.3	002.3	000.0039	0154.0	021.2	38.22
191.0	000.0004	0262.0	003.3	002.1	000.0039	0154.0	021.2	38.21
192.0	000.0004	0262.0	003.3	002.0	000.0039	0154.0	021.2	38.20
193.0	000.0004	0261.9	003.3	001.8	000.0039	0154.0	021.2	38.20
194.0	000.0004	0261.7	003.3	001.7	000.0039	0154.0	021.2	38.19
195.0	000.0004	0261.6	003.3	001.5	000.0039	0154.0	021.2	38.17
196.0	000.0004	0261.6	003.3	001.4	000.0039	0154.0	021.2	38.16
197.0	000.0004	0261.7	003.3	001.2	000.0039	0154.0	021.3	38.15
198.0	000.0004	0261.6	003.3	001.1	000.0039	0154.0	021.3	38.14
199.0	000.0004	0261.7	003.3	000.9	000.0039	0153.9	021.3	38.12
200.0	000.0004	0261.7	003.3	000.8	000.0039	0153.9	021.3	38.11
201.0	000.0004	0261.6	003.3	000.6	000.0039	0153.9	021.3	38.09
202.0	000.0004	0261.6	003.3	000.5	000.0039	0153.8	021.3	38.07
203.0	000.0004	0261.7	003.3	000.3	000.0039	0153.8	021.4	38.05
204.0	000.0004	0261.9	003.3	000.2	000.0039	0153.8	021.4	38.03
205.0	000.0004	0261.9	003.3	000.1	000.0039	0153.8	021.4	38.02
206.0	000.0004	0261.9	003.3	359.9	000.0039	0153.9	021.4	38.00
207.0	000.0004	0261.8	003.3	359.8	000.0039	0153.9	021.5	37.98
208.0	000.0004	0262.1	003.3	359.7	000.0039	0153.9	021.5	37.96
209.0	000.0004	0262.2	003.3	359.5	000.0039	0153.9	021.5	37.94
210.0	000.0004	0262.2	003.3	359.4	000.0039	0153.9	021.5	37.92
211.0	000.0004	0262.3	003.3	359.3	000.0039	0153.9	021.6	37.90
212.0	000.0004	0262.3	003.3	359.1	000.0039	0153.9	021.6	37.87
213.0	000.0004	0262.3	003.3	359.0	000.0039	0153.9	021.6	37.85
214.0	000.0004	0262.3	003.3	358.9	000.0039	0153.9	021.7	37.82
215.0	000.0004	0262.3	003.3	358.8	000.0039	0153.9	021.7	37.80
216.0	000.0004	0262.2	003.3	358.6	000.0039	0153.9	021.7	37.77
217.0	000.0004	0262.2	003.3	358.5	000.0039	0153.9	021.8	37.74
218.0	000.0004	0262.2	003.3	358.4	000.0039	0153.8	021.8	37.71
219.0	000.0004	0262.2	003.3	358.3	000.0039	0153.8	021.8	37.68
220.0	000.0004	0262.2	003.3	358.2	000.0039	0153.8	021.9	37.65
221.0	000.0005	0262.3	003.7	357.3	000.0039	0153.7	021.6	37.87
222.0	000.0007	0262.2	004.1	356.4	000.0039	0153.6	021.4	38.05
223.0	000.0009	0262.2	004.5	355.5	000.0039	0153.4	021.2	38.20
224.0	000.0011	0262.2	004.9	354.5	000.0039	0153.2	021.0	38.33
225.0	000.0014	0262.2	005.3	353.6	000.0039	0153.1	020.8	38.45
226.0	000.0016	0262.3	005.6	352.7	000.0039	0153.0	020.7	38.54
227.0	000.0020	0262.3	005.9	351.9	000.0039	0152.9	020.6	38.61

Exhibit 7b(1)
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)
228.0	000.0023	0262.3	006.2	351.0	000.0039	0152.7	020.5	38.67
229.0	000.0026	0262.3	006.5	350.2	000.0039	0152.8	020.4	38.71
230.0	000.0030	0262.3	006.8	349.4	000.0039	0152.7	020.4	38.74
231.0	000.0066	0262.4	008.5	344.9	000.0039	0152.9	019.8	39.26
232.0	000.0114	0262.4	009.8	341.0	000.0039	0153.2	019.4	39.55
233.0	000.0177	0262.6	010.9	337.7	000.0039	0153.4	019.3	39.69
234.0	000.0252	0262.6	011.9	334.7	000.0039	0153.0	019.2	39.68
235.0	000.0342	0262.6	012.8	332.0	000.0039	0153.0	019.3	39.62
236.0	000.0444	0262.6	013.6	329.5	000.0058	0153.1	019.5	41.22* 1.54
237.0	000.0561	0262.7	014.4	327.2	000.0208	0153.2	019.7	46.61* 9.22
238.0	000.0690	0262.7	015.2	325.0	000.0436	0153.4	020.0	49.60* 14.86
239.0	000.0833	0262.8	016.0	322.8	000.0733	0153.6	020.3	51.61* 19.19
240.0	000.0990	0262.8	016.7	320.8	000.1089	0153.7	020.7	53.03* 22.61
241.0	000.0990	0262.8	016.7	320.9	000.1063	0153.6	021.0	52.70* 22.08
242.0	000.0990	0262.8	016.7	321.1	000.1036	0153.6	021.3	52.36* 21.53
243.0	000.0990	0262.8	016.7	321.2	000.1008	0153.6	021.5	52.02* 20.98
244.0	000.0990	0262.8	016.7	321.4	000.0979	0153.6	021.8	51.67* 20.40
245.0	000.0990	0262.9	016.7	321.6	000.0948	0153.6	022.1	51.31* 19.81
246.0	000.0990	0262.8	016.7	321.8	000.0915	0153.6	022.4	50.95* 19.18
247.0	000.0990	0262.8	016.7	321.9	000.0882	0153.6	022.7	50.57* 18.55
248.0	000.0990	0262.8	016.7	322.1	000.0848	0153.6	023.0	50.19* 17.89
249.0	000.0990	0262.7	016.7	322.4	000.0813	0153.6	023.2	49.80* 17.21
250.0	000.0990	0262.7	016.7	322.6	000.0779	0153.6	023.5	49.41* 16.53
251.0	000.0990	0262.6	016.7	322.8	000.0741	0153.6	023.8	48.99* 15.80
252.0	000.0990	0262.5	016.7	323.0	000.0705	0153.6	024.1	48.57* 15.06
253.0	000.0990	0262.4	016.7	323.3	000.0669	0153.6	024.3	48.14* 14.30
254.0	000.0990	0262.4	016.7	323.5	000.0634	0153.6	024.6	47.72* 13.55
255.0	000.0990	0262.2	016.7	323.7	000.0597	0153.6	024.9	47.26* 12.73
256.0	000.0990	0261.9	016.7	324.0	000.0560	0153.5	025.2	46.79* 11.88
257.0	000.0990	0261.9	016.7	324.3	000.0526	0153.5	025.4	46.33* 11.06
258.0	000.0990	0262.5	016.7	324.5	000.0498	0153.5	025.7	45.90* 10.29
259.0	000.0990	0262.6	016.7	324.7	000.0466	0153.4	026.0	45.41* 9.43
260.0	000.0990	0262.5	016.7	325.0	000.0432	0153.4	026.2	44.91* 8.52
261.0	000.0990	0262.7	016.7	325.3	000.0402	0153.4	026.5	44.41* 7.63
262.0	000.0990	0262.7	016.7	325.5	000.0370	0153.3	026.8	43.88* 6.66
263.0	000.0990	0262.7	016.7	325.8	000.0339	0153.3	027.0	43.33* 5.66
264.0	000.0990	0262.7	016.7	326.1	000.0310	0153.3	027.3	42.75* 4.64
265.0	000.0990	0262.7	016.7	326.4	000.0281	0153.3	027.5	42.16* 3.59
266.0	000.0990	0262.6	016.7	326.7	000.0253	0153.2	027.8	41.54* 2.53
267.0	000.0990	0262.6	016.7	327.0	000.0226	0153.2	028.0	40.89* 1.43
268.0	000.0990	0262.4	016.7	327.3	000.0199	0153.2	028.3	40.18* 0.29
269.0	000.0990	0262.3	016.7	327.6	000.0174	0153.2	028.5	39.44
270.0	000.0990	0262.2	016.7	327.9	000.0151	0153.2	028.8	38.67
271.0	000.0990	0262.3	016.7	328.2	000.0130	0153.1	029.0	37.86
272.0	000.0990	0262.3	016.7	328.5	000.0110	0153.1	029.3	36.99

Exhibit 7b(2) - Proposed to Proposed Operations
47 C.F.R. Section 73.3517 Contingent Filing Request
47 C.F.R. Section 74.1204(c) Existing Contour Overlap Request

**12.42 km² of Given Overlap
from W228BY.P to W228BV.P**

Broward

60 dB μ F(50:50)

40 dB μ F(50:10)

40 dB μ F(50:10)

60 dB μ F(50:50)

W228BV.P
Fort Lauderdale, FL
Proposed Operation
Facility ID: 138576
Latitude: 25-59-34 N
Longitude: 080-10-27 W
ERP: 0.001 kW
Channel: 228D (93.5 MHz)
AMSL Height: 264.0 m
Pattern: Directional

W228BY.P
Miami, FL
Proposed Operation
Facility ID: 140483
Latitude: 25-46-20 N
Longitude: 080-11-20 W
ERP: 0.25 kW
Channel: 228D (93.5 MHz)
AMSL Height: 241.0 m
Pattern: Directional

NED 03 SEC Terrain Database
US Census 2010 PL Database

Scale 1:500,000

0 8 16 24 km

V-Soft Communications LLC ©

Miami-Dade

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

Exhibit 7b(2)

Contour Protection Studies Toward Select Allocation Concern(s)

06-05-2018

Terrain Data: NED 03 SEC

FMOver Analysis

W228BY.P (proposed)

Channel = 228D
 Max ERP = 0.25 kW
 RCAMSL = 241 m
 N. Lat. 25 46 20.0
 W. Lng. 80 11 20.0
 Protected
 60 dBu

W228BV.P (proposed)

Channel = 228D
 Max ERP = 0.001 kW
 RCAMSL = 264 m
 N. Lat. 25 59 34.0
 W. Lng. 80 10 27.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
321.0	000.2450	0238.7	020.1	237.8	000.0000	0262.8	016.7	16.15	
322.0	000.2401	0238.6	020.0	237.6	000.0000	0262.7	016.3	16.45	
323.0	000.2352	0238.6	019.9	237.3	000.0000	0262.7	016.0	16.75	
324.0	000.2304	0238.6	019.8	237.1	000.0000	0262.7	015.6	17.05	
325.0	000.2256	0238.5	019.7	236.7	000.0000	0262.7	015.3	17.35	
326.0	000.2209	0238.4	019.6	236.3	000.0000	0262.7	014.9	17.45	
327.0	000.2162	0238.3	019.5	235.9	000.0000	0262.6	014.6	17.85	
328.0	000.2116	0238.2	019.4	235.4	000.0000	0262.6	014.3	18.26	
329.0	000.2070	0238.1	019.3	234.9	000.0000	0262.6	013.9	18.68	
330.0	000.2025	0238.1	019.2	234.3	000.0000	0262.6	013.6	19.10	
331.0	000.2025	0238.0	019.2	234.2	000.0000	0262.6	013.3	19.55	
332.0	000.2025	0238.0	019.2	234.0	000.0000	0262.6	012.9	20.01	
333.0	000.2025	0238.0	019.2	233.8	000.0000	0262.6	012.6	20.49	
334.0	000.2025	0238.0	019.2	233.5	000.0000	0262.6	012.3	20.98	
335.0	000.2025	0238.0	019.2	233.2	000.0000	0262.6	012.0	21.47	
336.0	000.2025	0238.1	019.2	232.9	000.0000	0262.5	011.6	21.97	
337.0	000.2025	0238.3	019.2	232.5	000.0000	0262.5	011.3	22.49	
338.0	000.2025	0238.4	019.2	232.0	000.0000	0262.4	011.0	23.01	
339.0	000.2025	0238.4	019.2	231.5	000.0000	0262.4	010.7	23.54	
340.0	000.2025	0238.2	019.2	230.9	000.0000	0262.4	010.3	24.06	
341.0	000.2025	0238.2	019.2	230.3	000.0000	0262.4	010.0	24.60	
342.0	000.2025	0238.1	019.2	229.5	000.0000	0262.4	009.7	25.13	
343.0	000.2025	0238.1	019.2	228.8	000.0000	0262.3	009.4	25.67	
344.0	000.2025	0238.1	019.2	227.9	000.0000	0262.3	009.1	26.21	
345.0	000.2025	0237.9	019.1	226.8	000.0000	0262.3	008.8	26.73	
346.0	000.2025	0237.7	019.1	225.7	000.0000	0262.3	008.5	27.26	
347.0	000.2025	0237.6	019.1	224.5	000.0000	0262.3	008.2	27.78	
348.0	000.2025	0237.7	019.1	223.2	000.0000	0262.3	008.0	28.30	
349.0	000.2025	0237.6	019.1	221.8	000.0000	0262.2	007.7	28.82	
350.0	000.2025	0237.6	019.1	220.2	000.0000	0262.2	007.4	29.34	
351.0	000.2025	0237.6	019.1	218.5	000.0000	0262.2	007.2	29.86	
352.0	000.2025	0237.8	019.1	216.6	000.0000	0262.2	006.9	30.38	
353.0	000.2025	0238.0	019.2	214.6	000.0000	0262.3	006.7	30.88	

Exhibit 7b(2)
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)
354.0	000.2025	0238.1	019.2	212.4	000.0000	0262.3	006.5	31.36
355.0	000.2025	0238.2	019.2	210.0	000.0000	0262.2	006.3	31.81
356.0	000.2025	0238.5	019.2	207.5	000.0000	0261.9	006.1	32.24
357.0	000.2025	0238.7	019.2	204.8	000.0000	0261.9	005.9	32.64
358.0	000.2025	0238.7	019.2	201.8	000.0000	0261.7	005.8	32.99
359.0	000.2025	0238.8	019.2	198.7	000.0000	0261.7	005.6	33.29
000.0	000.2025	0238.8	019.2	195.4	000.0000	0261.6	005.5	33.53
001.0	000.2025	0238.9	019.2	192.0	000.0000	0262.0	005.5	33.73
002.0	000.2025	0238.9	019.2	188.5	000.0000	0262.0	005.4	33.86
003.0	000.2025	0239.0	019.2	185.0	000.0000	0262.0	005.4	33.93
004.0	000.2025	0239.2	019.2	181.4	000.0000	0262.0	005.4	33.94
005.0	000.2025	0239.4	019.2	177.9	000.0000	0262.4	005.4	33.90
006.0	000.2025	0239.5	019.2	174.3	000.0000	0262.6	005.4	33.78
007.0	000.2025	0239.6	019.2	170.9	000.0000	0262.5	005.5	33.59
008.0	000.2025	0239.9	019.2	167.6	000.0000	0262.6	005.6	33.37
009.0	000.2025	0240.2	019.2	164.4	000.0000	0262.8	005.7	33.10
010.0	000.2025	0240.4	019.2	161.4	000.0000	0263.1	005.9	32.77
011.0	000.2025	0240.5	019.3	158.6	000.0000	0263.4	006.0	32.38
012.0	000.2025	0240.6	019.3	156.0	000.0000	0263.4	006.2	31.96
013.0	000.2025	0240.4	019.2	153.6	000.0000	0263.5	006.4	31.49
014.0	000.2025	0240.8	019.3	151.3	000.0000	0263.7	006.6	31.04
015.0	000.2025	0240.9	019.3	149.3	000.0000	0263.7	006.9	30.54
016.0	000.2025	0240.9	019.3	147.4	000.0000	0263.7	007.1	30.02
017.0	000.2025	0240.9	019.3	145.7	000.0000	0263.6	007.4	29.48
018.0	000.2025	0240.9	019.3	144.1	000.0000	0263.6	007.6	28.95
019.0	000.2025	0240.9	019.3	142.7	000.0000	0263.5	007.9	28.41
020.0	000.2025	0240.9	019.3	141.4	000.0000	0263.6	008.2	27.88
021.0	000.2070	0240.9	019.4	139.6	000.0000	0263.6	008.4	27.44
022.0	000.2116	0240.9	019.5	138.0	000.0000	0263.6	008.7	26.98
023.0	000.2162	0240.8	019.6	136.4	000.0000	0263.6	009.0	26.50
024.0	000.2209	0240.6	019.7	135.0	000.0000	0263.6	009.2	26.00
025.0	000.2256	0240.7	019.8	133.7	000.0000	0263.5	009.5	25.48
026.0	000.2304	0240.8	019.9	132.5	000.0000	0263.5	009.8	24.97
027.0	000.2352	0240.9	020.0	131.4	000.0000	0263.5	010.1	24.44
028.0	000.2401	0240.8	020.1	130.4	000.0000	0263.6	010.5	23.90
029.0	000.2450	0240.8	020.2	129.5	000.0000	0263.6	010.8	23.36
030.0	000.2500	0240.8	020.3	128.7	000.0000	0263.5	011.1	22.82
031.0	000.2500	0240.9	020.3	128.4	000.0000	0263.5	011.5	22.26
032.0	000.2500	0240.9	020.3	128.2	000.0000	0263.5	011.8	21.71
033.0	000.2500	0240.9	020.3	128.0	000.0000	0263.5	012.2	21.17
034.0	000.2500	0240.9	020.3	127.9	000.0000	0263.5	012.5	20.65
035.0	000.2500	0240.9	020.3	127.8	000.0000	0263.5	012.9	20.14
036.0	000.2500	0240.9	020.3	127.7	000.0000	0263.5	013.2	19.64
037.0	000.2500	0240.9	020.3	127.7	000.0000	0263.5	013.6	19.16

Exhibit 7b(2)

Contour Protection Studies Toward Select Allocation Concern(s)

06-05-2018

Terrain Data: NED 03 SEC

FMOver Analysis

W228BV.P (proposed)

Channel = 228D
 Max ERP = 0.001 kW
 RCAMSL = 264 m
 N. Lat. 25 59 34.0
 W. Lng. 80 10 27.0
 Protected
 60 dBu

W228BY.P (proposed)

Channel = 228D
 Max ERP = 0.25 kW
 RCAMSL = 241 m
 N. Lat. 25 46 20.0
 W. Lng. 80 11 20.0
 Interfering
 40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
138.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.3	56.88*	35.47
139.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.3	56.88*	35.47
140.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.3	56.89*	35.48
141.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.3	56.89*	35.48
142.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.3	56.89*	35.49
143.0	000.0000	0263.5	000.4	004.1	000.2025	0239.2	024.2	56.90*	35.49
144.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.2	56.90*	35.50
145.0	000.0000	0263.6	000.4	004.1	000.2025	0239.2	024.2	56.90*	35.50
146.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.91*	35.51
147.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.91*	35.51
148.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.91*	35.51
149.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.92*	35.52
150.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.92*	35.52
151.0	000.0000	0263.7	000.4	004.0	000.2025	0239.2	024.2	56.92*	35.53
152.0	000.0000	0263.6	000.4	004.0	000.2025	0239.2	024.2	56.92*	35.53
153.0	000.0000	0263.5	000.4	003.9	000.2025	0239.2	024.2	56.93*	35.53
154.0	000.0000	0263.5	000.4	003.9	000.2025	0239.2	024.2	56.93*	35.54
155.0	000.0000	0263.4	000.4	003.9	000.2025	0239.2	024.2	56.93*	35.54
156.0	000.0000	0263.4	000.4	003.9	000.2025	0239.2	024.2	56.94*	35.54
157.0	000.0000	0263.4	000.4	003.9	000.2025	0239.2	024.2	56.94*	35.55
158.0	000.0000	0263.5	000.4	003.9	000.2025	0239.2	024.2	56.94*	35.55
159.0	000.0000	0263.3	000.4	003.8	000.2025	0239.2	024.2	56.94*	35.55
160.0	000.0000	0263.2	000.4	003.8	000.2025	0239.2	024.2	56.94*	35.56
161.0	000.0000	0263.1	000.4	003.8	000.2025	0239.2	024.2	56.95*	35.56
162.0	000.0000	0263.1	000.4	003.8	000.2025	0239.2	024.2	56.95*	35.56
163.0	000.0000	0263.0	000.4	003.8	000.2025	0239.2	024.2	56.95*	35.56
164.0	000.0000	0262.8	000.4	003.8	000.2025	0239.2	024.2	56.95*	35.57
165.0	000.0000	0262.7	000.4	003.7	000.2025	0239.2	024.2	56.95*	35.57
166.0	000.0000	0262.5	000.4	003.7	000.2025	0239.2	024.2	56.96*	35.57
167.0	000.0000	0262.5	000.4	003.7	000.2025	0239.2	024.2	56.96*	35.57
168.0	000.0000	0262.6	000.4	003.7	000.2025	0239.2	024.2	56.96*	35.57
169.0	000.0000	0262.6	000.4	003.7	000.2025	0239.2	024.2	56.96*	35.58
170.0	000.0000	0262.6	000.4	003.7	000.2025	0239.2	024.2	56.96*	35.58

Exhibit 7b(2)
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)	
171.0	000.0000	0262.5	000.4	003.6	000.2025	0239.2	024.2	56.96*	35.58
172.0	000.0000	0262.5	000.4	003.6	000.2025	0239.1	024.2	56.96*	35.58
173.0	000.0000	0262.6	000.4	003.6	000.2025	0239.1	024.2	56.96*	35.58
174.0	000.0000	0262.7	000.4	003.6	000.2025	0239.1	024.2	56.97*	35.58
175.0	000.0000	0262.6	000.4	003.6	000.2025	0239.1	024.1	56.97*	35.58
176.0	000.0000	0262.6	000.4	003.6	000.2025	0239.1	024.1	56.97*	35.58
177.0	000.0000	0262.5	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.58
178.0	000.0000	0262.4	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.58
179.0	000.0000	0262.3	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.59
180.0	000.0000	0262.1	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.59
181.0	000.0000	0262.0	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.59
182.0	000.0000	0261.9	000.4	003.5	000.2025	0239.1	024.1	56.97*	35.59
183.0	000.0000	0261.9	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.59
184.0	000.0000	0261.9	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.59
185.0	000.0000	0262.0	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.59
186.0	000.0000	0262.1	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.58
187.0	000.0000	0262.1	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.58
188.0	000.0000	0262.1	000.4	003.4	000.2025	0239.1	024.1	56.97*	35.58
189.0	000.0000	0262.0	000.4	003.3	000.2025	0239.1	024.1	56.97*	35.58
190.0	000.0000	0262.0	000.4	003.3	000.2025	0239.1	024.1	56.97*	35.58
191.0	000.0000	0262.0	000.4	003.3	000.2025	0239.1	024.1	56.97*	35.58
192.0	000.0000	0262.0	000.4	003.3	000.2025	0239.1	024.1	56.96*	35.58
193.0	000.0000	0261.9	000.4	003.3	000.2025	0239.1	024.2	56.96*	35.58
194.0	000.0000	0261.7	000.4	003.3	000.2025	0239.1	024.2	56.96*	35.58
195.0	000.0000	0261.6	000.4	003.2	000.2025	0239.1	024.2	56.96*	35.57
196.0	000.0000	0261.6	000.4	003.2	000.2025	0239.1	024.2	56.96*	35.57
197.0	000.0000	0261.7	000.4	003.2	000.2025	0239.1	024.2	56.96*	35.57
198.0	000.0000	0261.6	000.4	003.2	000.2025	0239.1	024.2	56.96*	35.57
199.0	000.0000	0261.7	000.4	003.2	000.2025	0239.1	024.2	56.96*	35.57
200.0	000.0000	0261.7	000.4	003.1	000.2025	0239.1	024.2	56.95*	35.56
201.0	000.0000	0261.6	000.4	003.1	000.2025	0239.1	024.2	56.95*	35.56
202.0	000.0000	0261.6	000.4	003.1	000.2025	0239.1	024.2	56.95*	35.56
203.0	000.0000	0261.7	000.4	003.1	000.2025	0239.1	024.2	56.95*	35.56
204.0	000.0000	0261.9	000.4	003.1	000.2025	0239.1	024.2	56.95*	35.55
205.0	000.0000	0261.9	000.4	003.1	000.2025	0239.0	024.2	56.94*	35.55
206.0	000.0000	0261.9	000.4	003.1	000.2025	0239.0	024.2	56.94*	35.55
207.0	000.0000	0261.8	000.4	003.0	000.2025	0239.0	024.2	56.94*	35.54
208.0	000.0000	0262.1	000.4	003.0	000.2025	0239.0	024.2	56.94*	35.54
209.0	000.0000	0262.2	000.4	003.0	000.2025	0239.0	024.2	56.93*	35.54
210.0	000.0000	0262.2	000.4	003.0	000.2025	0239.0	024.2	56.93*	35.53
211.0	000.0000	0262.3	000.4	003.0	000.2025	0239.0	024.2	56.93*	35.53
212.0	000.0000	0262.3	000.4	003.0	000.2025	0239.0	024.2	56.93*	35.52
213.0	000.0000	0262.3	000.4	002.9	000.2025	0239.0	024.2	56.92*	35.52
214.0	000.0000	0262.3	000.4	002.9	000.2025	0239.0	024.2	56.92*	35.52
215.0	000.0000	0262.3	000.4	002.9	000.2025	0239.0	024.2	56.92*	35.51

Exhibit 8

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

Yellow Text denotes the existence of multiple 47 C.F.R. Section 74.1204(d) Second/Third Adjacent Channel Given Interference Waiver Requests toward WMIA-FM - Miami Beach, FL (CH230C0) and WFEZ(FM) - Miami, FL (CH226C0) as included in **Exhibit 8**. Protection of the worst case calculated 126.5 dBμ F(50:10) Interference Contour, corresponding to the 86.5 dBμ F(50:50) Protected Contour, has been demonstrated through a downward radiation study. Full protection will be afforded each facility as this area will not reach the ground nor a 213.5 meter artificial plane representing the top 50th occupied floor of this 55 story office building (see **Exhibit 4**), when taking into account the downward radiation characteristics of the antenna as supplied by the antenna manufacturer. A copy of the antenna manufacturer specifications has been included in **Exhibit 9**.

Signal Report

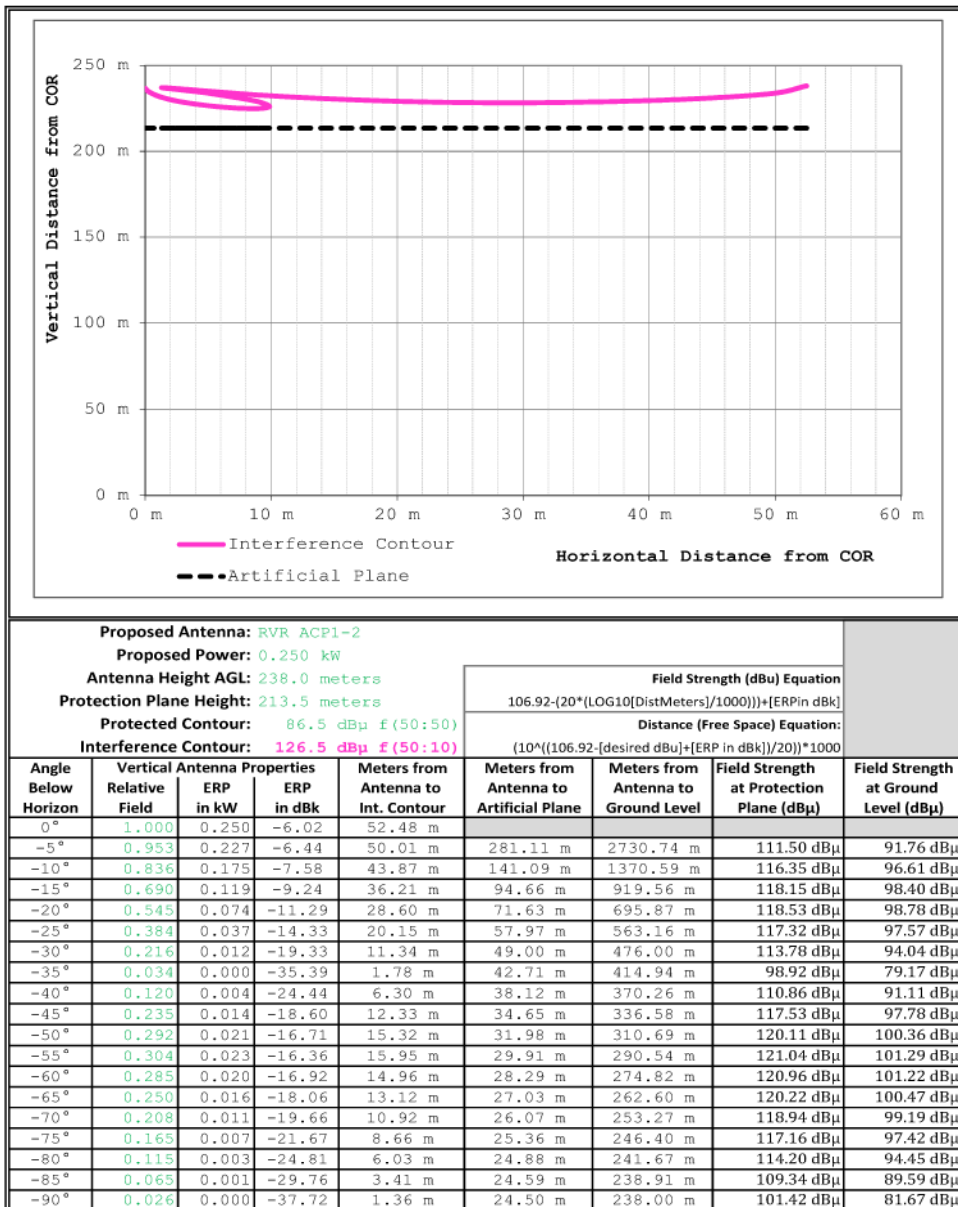
WMIA-FM Signal value at Reference site = 86.5 dBu. Distance to W228BY.P interference signal contour = 52.5 m

OK

Signal Report

WFEZ Signal value at Reference site = 86.5 dBu. Distance to W228BY.P interference signal contour = 52.5 m

OK

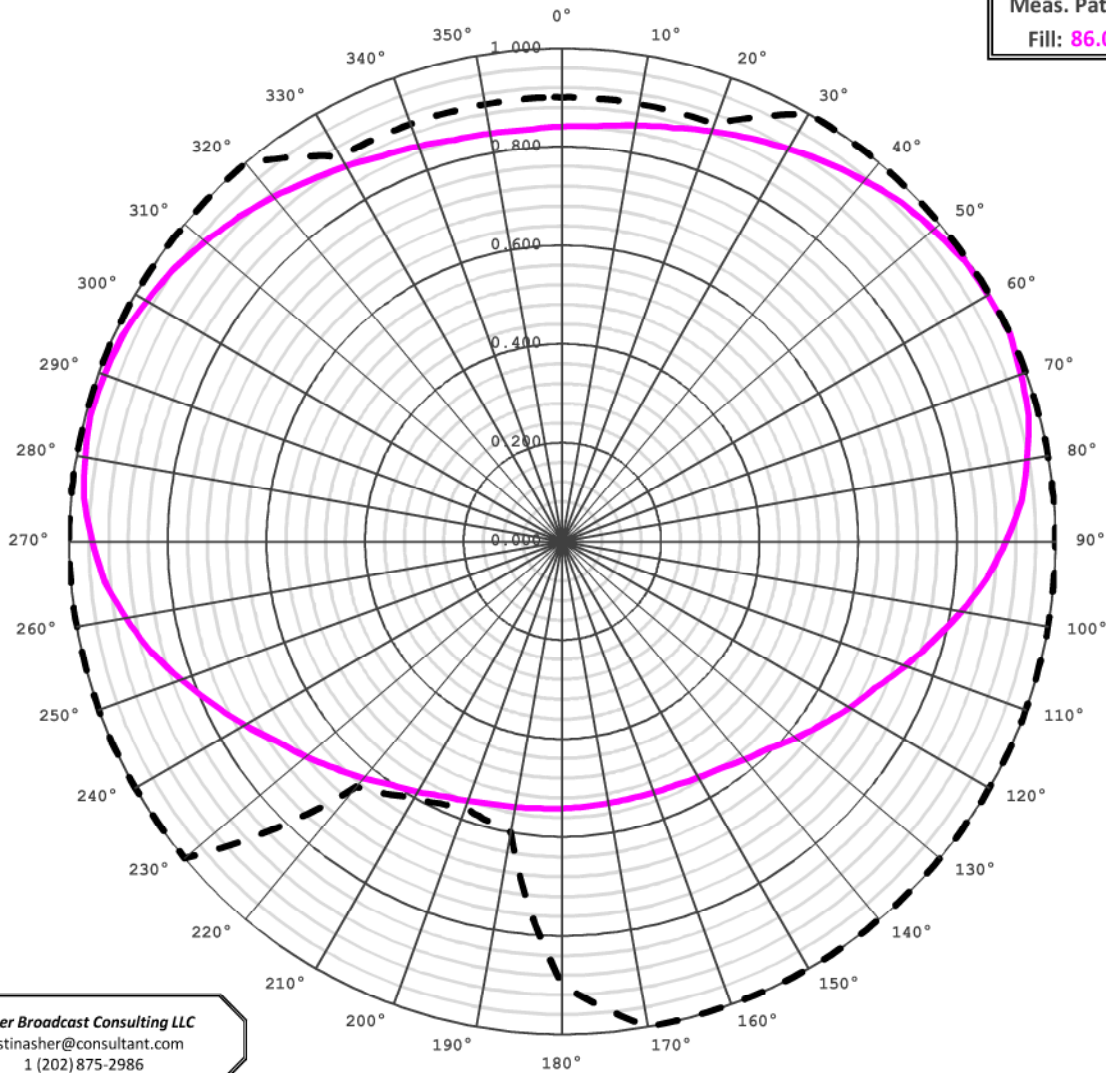


Manufacturer's	Make/Model	Orientation	Power
Element 1:	ACP1-2DA	355° True	100.0%
Element 2:			
Element 3:			
Element 4:			

Composite Power: 100%

Exhibit 9 - Copy of Manufacturer's Directional Antenna Pattern Data

Meas. Pattern
Fill: 86.0%



Azimuth ° True	FCC Pattern	Manufacturer's Pattern
0°	0.900	0.841
10°	0.900	0.857
20°	0.900	0.885
30°	1.000	0.919
40°	1.000	0.954
50°	1.000	0.983
60°	1.000	0.997
70°	1.000	0.990
80°	1.000	0.957
90°	1.000	0.900
100°	1.000	0.822
110°	1.000	0.741
120°	1.000	0.674
130°	1.000	0.619
140°	1.000	0.577
150°	1.000	0.553
160°	1.000	0.542
170°	1.000	0.540
180°	0.900	0.542
190°	0.600	0.547
200°	0.575	0.561
210°	0.600	0.587
220°	0.650	0.627
230°	1.000	0.679
240°	1.000	0.744
250°	1.000	0.823
260°	1.000	0.898
270°	1.000	0.953
280°	1.000	0.983
290°	1.000	0.988
300°	1.000	0.974
310°	1.000	0.946
320°	1.000	0.911
330°	0.900	0.878
340°	0.900	0.852
350°	0.900	0.840

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

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

Exhibit 9

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 355°T) (public record copy)



Model ACP1

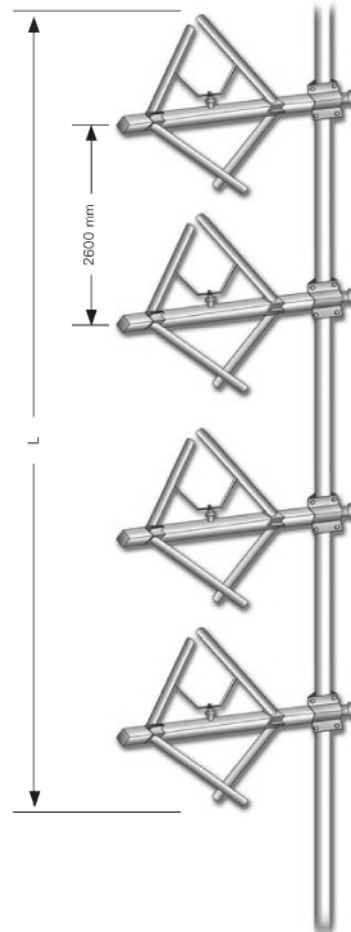
Radiations systems with ACP1 antenna Omnidirectional patterns

ELECTRICAL DATA

Frequency range	87.5÷108 MHz
Impedance	50 Ohm
Connector	EIA flange according to system power rating
VSWR	≤ 1.4:1 Max
Polarization	Circular
Gain	According to requirement
Horizontal pattern	Any type according to requirements
Vertical pattern	Null fill, beam tilt and special requirements to order
Other facilities	The antenna system can be supplied in split feed with two equal half antennas. Each half can accept full power

MECHANICAL DATA

Height of array	Subject to number of bays (refer to table)
Total net weight	Refer to table
Wind load	Refer to table
Pressurizable	Yes (on request)
Mounting hardware	Hot dip galvanized steel clamps
Shipping	As required



TECHNICAL DATA

Number of bays	Dipole per bay	Gain ¹		Weight ² kg	Antenna height L m	Wind load (v=160 km/h) kg	SYSTEMS MODELS ³			
		dB	times				2 KW	4 KW	6 KW	10 KW
2	1	-1.50	0.71	26	3.8	62.2	ACP1X22	ACP1X24	ACP1X26	-
3	1	0.27	1.06	39	6.4	93.3	-	-	-	-
4	1	1.50	1.42	52	9.0	124.4	ACP1X42	ACP1X44	ACP1X46	ACP1X410
6	1	3.28	2.13	78	14.2	186.6	ACP1X62	ACP1X64	-	ACP1X610
8	1	4.50	2.84	104	19.4	248.8	ACP1X82	ACP1X84	ACP1X86	ACP1X810
12	1	6.29	4.26	156	29.8	373.2	-	-	-	-

¹ Referred to a half wave dipole. Attenuation of connecting cables not taken into account.

² Without mounting hardware.

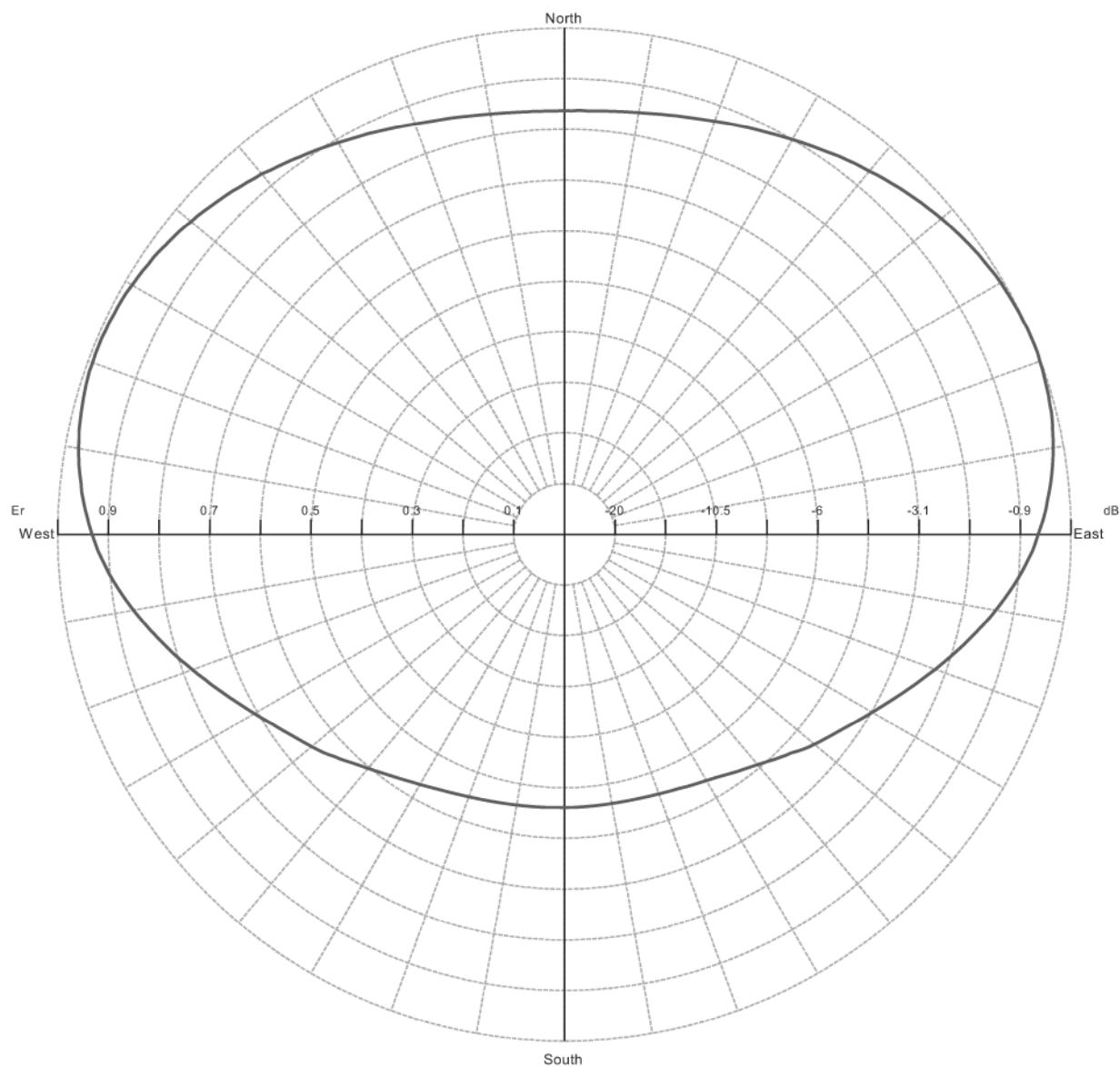
³ The systems comprised: antennas, cables and splitter – for more details to see catalog – different version on request.

- Gain is provided for vertical polarization.
- When antenna is pole mounted on the top a tower the horizontally polarized radiation pattern is omni - directional.
- If the antenna is side mounted, the supporting structure will have a slight effect on the radiation pattern and VSWR.
- Vertical tower space, wind load and weight numbers given are typical. Actual values vary with the specific installation. Contact us for more details of your installation.
- Gain will be reduced if null fill, beam tilt or special wavelength spacing is provided.
- Antenna radiation aperture is the distance from the centre of the top bay to the centre of the bottom bay.
- Five ft(1.6mt) of pipe required above the top bay and below the bottom bay for to protect from pattern interference by other antennas.
- Antenna wind load is calculated for 100 Mph (160Km/h) per EIA-222-C standard.

These specifications are subject to change without notice

Exhibit 9
Copy of Manufacturer's Directional Antenna Documentation
(Actual Antenna Pattern rotated to 355°T) (public record copy)

Horizontal diagram at 0.0° tilt (Total Antenna)



— 0.0° Tilt (Total Antenna), Gain (dBd): -0.4

ERP T.Max(KW): 0.001 ERP E.Max(KW): 0.001

Exhibit 9

Copy of Manufacturer's Directional Antenna Documentation

(Actual Antenna Pattern rotated to 355°T) (public record copy)

Horizontal diagram at 0.0° tilt (Total Antenna)

Az (°)	Er (%)	ERP (W)	Az (°)	Er (%)	ERP (W)	Az (°)	Er (%)	ERP (W)
0.0	83.7	0.6	60.0	99.4	0.9	120.0	70.2	0.4
1.0	83.7	0.6	61.0	99.5	0.9	121.0	69.5	0.4
2.0	83.8	0.6	62.0	99.7	0.9	122.0	68.8	0.4
3.0	83.8	0.6	63.0	99.8	0.9	123.0	68.2	0.4
4.0	83.8	0.6	64.0	99.9	0.9	124.0	67.6	0.4
5.0	83.9	0.6	65.0	99.9	0.9	125.0	67.0	0.4
6.0	84.0	0.6	66.0	100.0	0.9	126.0	66.5	0.4
7.0	84.1	0.6	67.0	100.0	0.9	127.0	66.0	0.4
8.0	84.2	0.6	68.0	100.0	0.9	128.0	65.4	0.4
9.0	84.4	0.7	69.0	100.0	0.9	129.0	64.9	0.4
10.0	84.5	0.7	70.0	99.9	0.9	130.0	64.5	0.4
11.0	84.7	0.7	71.0	99.8	0.9	131.0	63.9	0.4
12.0	84.9	0.7	72.0	99.7	0.9	132.0	63.3	0.4
13.0	85.1	0.7	73.0	99.5	0.9	133.0	62.8	0.4
14.0	85.3	0.7	74.0	99.4	0.9	134.0	62.2	0.4
15.0	85.5	0.7	75.0	99.2	0.9	135.0	61.7	0.3
16.0	85.7	0.7	76.0	99.1	0.9	136.0	61.2	0.3
17.0	86.0	0.7	77.0	98.9	0.9	137.0	60.7	0.3
18.0	86.2	0.7	78.0	98.5	0.9	138.0	60.2	0.3
19.0	86.5	0.7	79.0	98.3	0.9	139.0	59.7	0.3
20.0	86.8	0.7	80.0	97.9	0.9	140.0	59.3	0.3
21.0	87.1	0.7	81.0	97.6	0.9	141.0	58.9	0.3
22.0	87.4	0.7	82.0	97.3	0.9	142.0	58.5	0.3
23.0	87.7	0.7	83.0	96.9	0.9	143.0	58.2	0.3
24.0	88.0	0.7	84.0	96.5	0.8	144.0	57.9	0.3
25.0	88.3	0.7	85.0	96.1	0.8	145.0	57.5	0.3
26.0	88.6	0.7	86.0	95.6	0.8	146.0	57.2	0.3
27.0	88.9	0.7	87.0	95.2	0.8	147.0	56.9	0.3
28.0	89.3	0.7	88.0	94.6	0.8	148.0	56.6	0.3
29.0	89.6	0.7	89.0	94.1	0.8	149.0	56.3	0.3
30.0	90.1	0.7	90.0	93.5	0.8	150.0	56.1	0.3
31.0	90.4	0.7	91.0	93.0	0.8	151.0	55.9	0.3
32.0	90.7	0.7	92.0	92.4	0.8	152.0	55.7	0.3
33.0	91.1	0.8	93.0	91.8	0.8	153.0	55.5	0.3
34.0	91.4	0.8	94.0	91.1	0.8	154.0	55.3	0.3
35.0	91.8	0.8	95.0	90.4	0.7	155.0	55.1	0.3
36.0	92.3	0.8	96.0	89.6	0.7	156.0	55.0	0.3
37.0	92.6	0.8	97.0	88.9	0.7	157.0	54.9	0.3
38.0	93.0	0.8	98.0	88.1	0.7	158.0	54.8	0.3
39.0	93.3	0.8	99.0	87.3	0.7	159.0	54.6	0.3
40.0	93.6	0.8	100.0	86.4	0.7	160.0	54.5	0.3
41.0	94.1	0.8	101.0	85.6	0.7	161.0	54.4	0.3
42.0	94.4	0.8	102.0	84.8	0.7	162.0	54.3	0.3
43.0	94.7	0.8	103.0	83.9	0.6	163.0	54.3	0.3
44.0	95.2	0.8	104.0	83.0	0.6	164.0	54.2	0.3
45.0	95.5	0.8	105.0	82.2	0.6	165.0	54.1	0.3
46.0	95.8	0.8	106.0	81.3	0.6	166.0	54.1	0.3
47.0	96.2	0.8	107.0	80.5	0.6	167.0	54.0	0.3
48.0	96.5	0.8	108.0	79.6	0.6	168.0	54.0	0.3
49.0	96.8	0.9	109.0	78.8	0.6	169.0	53.9	0.3
50.0	97.2	0.9	110.0	77.9	0.6	170.0	53.9	0.3
51.0	97.4	0.9	111.0	77.0	0.5	171.0	53.9	0.3
52.0	97.7	0.9	112.0	76.2	0.5	172.0	53.9	0.3
53.0	97.9	0.9	113.0	75.4	0.5	173.0	53.9	0.3
54.0	98.2	0.9	114.0	74.6	0.5	174.0	53.9	0.3
55.0	98.5	0.9	115.0	73.8	0.5	175.0	53.9	0.3
56.0	98.7	0.9	116.0	73.1	0.5	176.0	53.9	0.3
57.0	98.9	0.9	117.0	72.3	0.5	177.0	53.9	0.3
58.0	99.1	0.9	118.0	71.5	0.5	178.0	53.9	0.3
59.0	99.3	0.9	119.0	70.8	0.5	179.0	53.9	0.3

Exhibit 9

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 355°T) (public record copy)

Horizontal diagram at 0.0° tilt (Total Antenna)

Az (°)	Er (%)	ERP (W)	Az (°)	Er (%)	ERP (W)	Az (°)	Er (%)	ERP (W)
180.0	54.0	0.3	240.0	70.7	0.5	300.0	98.5	0.9
181.0	54.0	0.3	241.0	71.3	0.5	301.0	98.4	0.9
182.0	54.0	0.3	242.0	72.0	0.5	302.0	98.2	0.9
183.0	54.0	0.3	243.0	72.7	0.5	303.0	97.9	0.9
184.0	54.0	0.3	244.0	73.5	0.5	304.0	97.8	0.9
185.0	54.1	0.3	245.0	74.2	0.5	305.0	97.6	0.9
186.0	54.1	0.3	246.0	75.0	0.5	306.0	97.3	0.9
187.0	54.1	0.3	247.0	75.8	0.5	307.0	97.1	0.9
188.0	54.1	0.3	248.0	76.5	0.5	308.0	96.8	0.9
189.0	54.2	0.3	249.0	77.4	0.5	309.0	96.5	0.8
190.0	54.3	0.3	250.0	78.1	0.6	310.0	96.2	0.8
191.0	54.3	0.3	251.0	78.9	0.6	311.0	95.9	0.8
192.0	54.4	0.3	252.0	79.8	0.6	312.0	95.6	0.8
193.0	54.4	0.3	253.0	80.6	0.6	313.0	95.3	0.8
194.0	54.5	0.3	254.0	81.5	0.6	314.0	95.0	0.8
195.0	54.6	0.3	255.0	82.2	0.6	315.0	94.6	0.8
196.0	54.7	0.3	256.0	83.1	0.6	316.0	94.3	0.8
197.0	54.8	0.3	257.0	84.0	0.6	317.0	93.9	0.8
198.0	54.9	0.3	258.0	84.8	0.7	318.0	93.5	0.8
199.0	55.0	0.3	259.0	85.6	0.7	319.0	93.2	0.8
200.0	55.1	0.3	260.0	86.4	0.7	320.0	92.9	0.8
201.0	55.3	0.3	261.0	87.2	0.7	321.0	92.5	0.8
202.0	55.5	0.3	262.0	88.0	0.7	322.0	92.2	0.8
203.0	55.6	0.3	263.0	88.7	0.7	323.0	91.7	0.8
204.0	55.7	0.3	264.0	89.4	0.7	324.0	91.4	0.8
205.0	55.9	0.3	265.0	90.2	0.7	325.0	91.0	0.8
206.0	56.1	0.3	266.0	90.8	0.8	326.0	90.7	0.7
207.0	56.3	0.3	267.0	91.4	0.8	327.0	90.4	0.7
208.0	56.5	0.3	268.0	92.1	0.8	328.0	89.9	0.7
209.0	56.7	0.3	269.0	92.7	0.8	329.0	89.6	0.7
210.0	57.0	0.3	270.0	93.2	0.8	330.0	89.3	0.7
211.0	57.3	0.3	271.0	93.8	0.8	331.0	88.9	0.7
212.0	57.5	0.3	272.0	94.2	0.8	332.0	88.6	0.7
213.0	57.8	0.3	273.0	94.7	0.8	333.0	88.3	0.7
214.0	58.1	0.3	274.0	95.2	0.8	334.0	88.0	0.7
215.0	58.5	0.3	275.0	95.6	0.8	335.0	87.7	0.7
216.0	58.8	0.3	276.0	95.9	0.8	336.0	87.4	0.7
217.0	59.1	0.3	277.0	96.4	0.8	337.0	87.1	0.7
218.0	59.5	0.3	278.0	96.7	0.9	338.0	86.8	0.7
219.0	59.9	0.3	279.0	97.1	0.9	339.0	86.5	0.7
220.0	60.3	0.3	280.0	97.4	0.9	340.0	86.2	0.7
221.0	60.7	0.3	281.0	97.6	0.9	341.0	86.0	0.7
222.0	61.2	0.3	282.0	97.9	0.9	342.0	85.7	0.7
223.0	61.6	0.3	283.0	98.2	0.9	343.0	85.5	0.7
224.0	62.1	0.4	284.0	98.3	0.9	344.0	85.3	0.7
225.0	62.6	0.4	285.0	98.5	0.9	345.0	85.1	0.7
226.0	63.1	0.4	286.0	98.7	0.9	346.0	84.9	0.7
227.0	63.7	0.4	287.0	98.9	0.9	347.0	84.7	0.7
228.0	64.2	0.4	288.0	99.0	0.9	348.0	84.5	0.7
229.0	64.7	0.4	289.0	99.1	0.9	349.0	84.4	0.7
230.0	65.1	0.4	290.0	99.1	0.9	350.0	84.2	0.6
231.0	65.6	0.4	291.0	99.2	0.9	351.0	84.1	0.6
232.0	66.1	0.4	292.0	99.2	0.9	352.0	84.0	0.6
233.0	66.5	0.4	293.0	99.2	0.9	353.0	83.9	0.6
234.0	67.1	0.4	294.0	99.1	0.9	354.0	83.8	0.6
235.0	67.6	0.4	295.0	99.1	0.9	355.0	83.8	0.6
236.0	68.2	0.4	296.0	99.0	0.9	356.0	83.8	0.6
237.0	68.8	0.4	297.0	99.0	0.9	357.0	83.7	0.6
238.0	69.4	0.4	298.0	98.9	0.9	358.0	83.7	0.6
239.0	70.0	0.4	299.0	98.7	0.9	359.0	83.7	0.6

Exhibit 9

Copy of Manufacturer's Directional Antenna Documentation
(Actual Antenna Pattern rotated to 355°T) (public record copy)

Vertical diagram at an azimuth of 66.9°

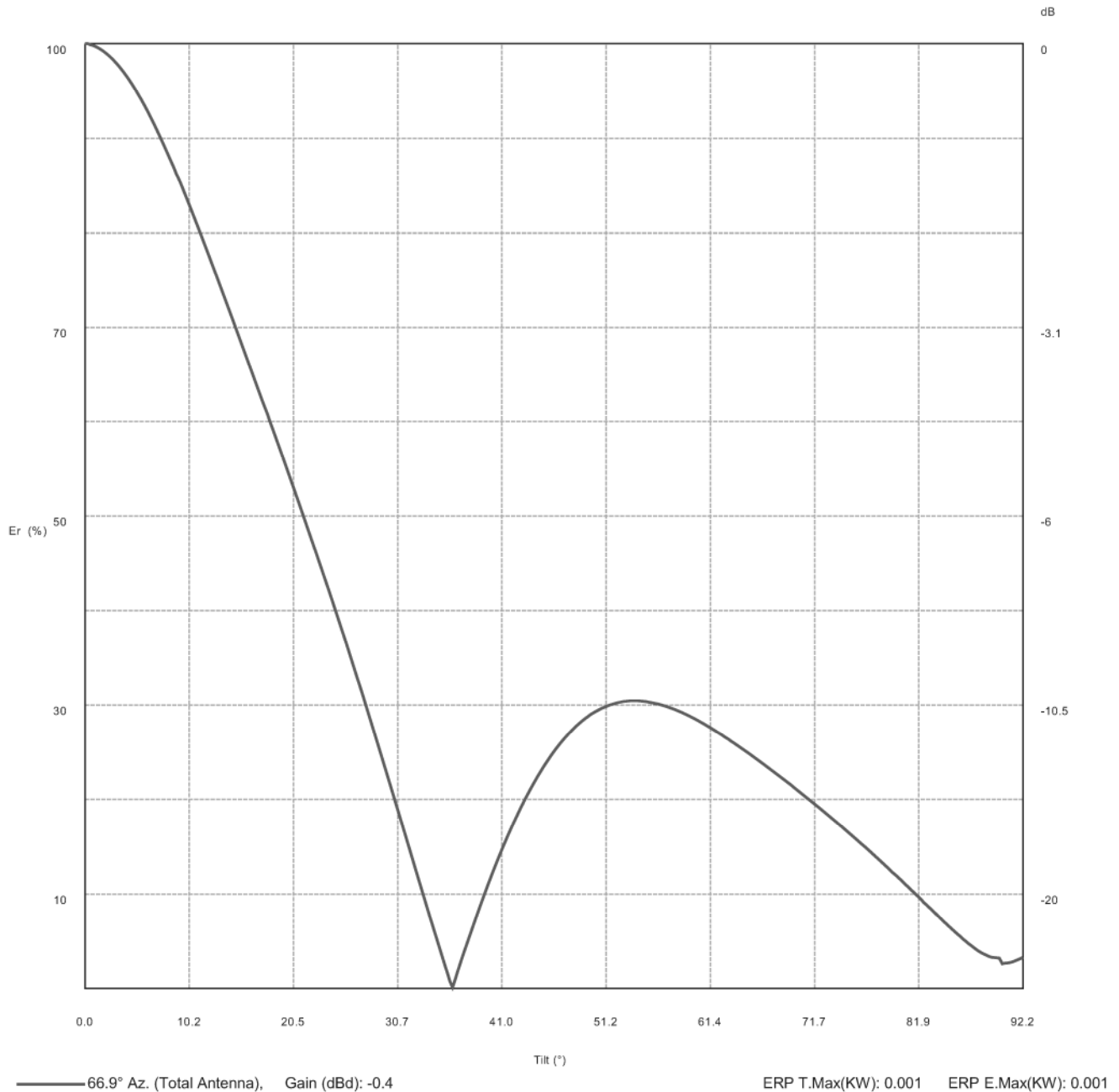


Exhibit 9
Copy of Manufacturer's Directional Antenna Documentation
(Actual Antenna Pattern rotated to 355°T) *(public record copy)*

Vertical diagram at an azimuth of 66.9°

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.1	0.9	15.4	68.3	0.4	30.7	18.8	0.0
0.3	100.0	0.9	15.6	67.5	0.4	31.0	17.9	0.0
0.5	99.9	0.9	15.9	66.7	0.4	31.2	17.0	0.0
0.8	99.8	0.9	16.1	66.0	0.4	31.5	16.1	0.0
1.0	99.7	0.9	16.4	65.2	0.4	31.7	15.2	0.0
1.3	99.6	0.9	16.6	64.5	0.4	32.0	14.2	0.0
1.5	99.4	0.9	16.9	63.7	0.4	32.3	13.3	0.0
1.8	99.2	0.9	17.2	63.0	0.4	32.5	12.4	0.0
2.0	99.0	0.9	17.4	62.2	0.4	32.8	11.5	0.0
2.3	98.8	0.9	17.7	61.5	0.3	33.0	10.6	0.0
2.6	98.5	0.9	17.9	60.7	0.3	33.3	9.7	0.0
2.8	98.3	0.9	18.2	60.0	0.3	33.5	8.7	0.0
3.1	98.0	0.9	18.4	59.2	0.3	33.8	7.8	0.0
3.3	97.6	0.9	18.7	58.4	0.3	34.0	6.9	0.0
3.6	97.3	0.9	18.9	57.6	0.3	34.3	6.0	0.0
3.8	96.9	0.9	19.2	56.9	0.3	34.6	5.1	0.0
4.1	96.5	0.8	19.5	56.1	0.3	34.8	4.3	0.0
4.4	96.1	0.8	19.7	55.3	0.3	35.1	3.4	0.0
4.6	95.7	0.8	20.0	54.5	0.3	35.3	2.5	0.0
4.9	95.3	0.8	20.2	53.8	0.3	35.6	1.6	0.0
5.1	94.8	0.8	20.5	53.0	0.3	35.8	0.8	0.0
5.4	94.4	0.8	20.7	52.2	0.2	36.1	0.1	0.0
5.6	93.9	0.8	21.0	51.4	0.2	36.4	1.0	0.0
5.9	93.4	0.8	21.2	50.7	0.2	36.6	1.8	0.0
6.1	92.8	0.8	21.5	49.9	0.2	36.9	2.6	0.0
6.4	92.3	0.8	21.8	49.1	0.2	37.1	3.5	0.0
6.7	91.7	0.8	22.0	48.3	0.2	37.4	4.3	0.0
6.9	91.2	0.8	22.3	47.5	0.2	37.6	5.1	0.0
7.2	90.6	0.7	22.5	46.7	0.2	37.9	5.9	0.0
7.4	90.0	0.7	22.8	45.8	0.2	38.1	6.7	0.0
7.7	89.4	0.7	23.0	45.0	0.2	38.4	7.5	0.0
7.9	88.8	0.7	23.3	44.2	0.2	38.7	8.3	0.0
8.2	88.2	0.7	23.6	43.4	0.2	38.9	9.0	0.0
8.4	87.5	0.7	23.8	42.6	0.2	39.2	9.8	0.0
8.7	86.9	0.7	24.1	41.7	0.2	39.4	10.5	0.0
9.0	86.3	0.7	24.3	40.9	0.2	39.7	11.2	0.0
9.2	85.6	0.7	24.6	40.1	0.1	39.9	12.0	0.0
9.5	84.9	0.7	24.8	39.2	0.1	40.2	12.7	0.0
9.7	84.3	0.6	25.1	38.4	0.1	40.4	13.4	0.0
10.0	83.6	0.6	25.3	37.5	0.1	40.7	14.0	0.0
10.2	82.9	0.6	25.6	36.7	0.1	41.0	14.7	0.0
10.5	82.2	0.6	25.9	35.8	0.1	41.2	15.4	0.0
10.8	81.5	0.6	26.1	35.0	0.1	41.5	16.0	0.0
11.0	80.8	0.6	26.4	34.1	0.1	41.7	16.6	0.0
11.3	80.1	0.6	26.6	33.2	0.1	42.0	17.2	0.0
11.5	79.4	0.6	26.9	32.4	0.1	42.2	17.8	0.0
11.8	78.7	0.6	27.1	31.5	0.1	42.5	18.4	0.0
12.0	77.9	0.6	27.4	30.6	0.1	42.8	19.0	0.0
12.3	77.2	0.5	27.6	29.7	0.1	43.0	19.6	0.0
12.5	76.5	0.5	27.9	28.8	0.1	43.3	20.1	0.0
12.8	75.7	0.5	28.2	27.9	0.1	43.5	20.6	0.0
13.1	75.0	0.5	28.4	27.0	0.1	43.8	21.1	0.0
13.3	74.2	0.5	28.7	26.1	0.1	44.0	21.6	0.0
13.6	73.5	0.5	28.9	25.2	0.1	44.3	22.1	0.0
13.8	72.7	0.5	29.2	24.3	0.1	44.5	22.6	0.0
14.1	72.0	0.5	29.4	23.4	0.0	44.8	23.0	0.0
14.3	71.3	0.5	29.7	22.5	0.0	45.1	23.5	0.1
14.6	70.5	0.5	30.0	21.6	0.0	45.3	23.9	0.1
14.8	69.8	0.4	30.2	20.7	0.0	45.6	24.3	0.1
15.1	69.0	0.4	30.5	19.8	0.0	45.8	24.7	0.1

Exhibit 9

Copy of Manufacturer's Directional Antenna Documentation (Actual Antenna Pattern rotated to 355°T) (public record copy)

Vertical diagram at an azimuth of 66.9°

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
46.1	25.1	0.1	61.4	27.6	0.1	76.8	14.8	0.0
46.3	25.5	0.1	61.7	27.4	0.1	77.1	14.5	0.0
46.6	25.8	0.1	62.0	27.2	0.1	77.3	14.3	0.0
46.8	26.2	0.1	62.2	27.1	0.1	77.6	14.0	0.0
47.1	26.5	0.1	62.5	26.9	0.1	77.8	13.8	0.0
47.4	26.8	0.1	62.7	26.7	0.1	78.1	13.5	0.0
47.6	27.1	0.1	63.0	26.6	0.1	78.3	13.3	0.0
47.9	27.4	0.1	63.2	26.4	0.1	78.6	13.0	0.0
48.1	27.7	0.1	63.5	26.2	0.1	78.8	12.8	0.0
48.4	27.9	0.1	63.7	26.0	0.1	79.1	12.5	0.0
48.6	28.2	0.1	64.0	25.8	0.1	79.4	12.3	0.0
48.9	28.4	0.1	64.3	25.6	0.1	79.6	12.0	0.0
49.2	28.6	0.1	64.5	25.4	0.1	79.9	11.7	0.0
49.4	28.8	0.1	64.8	25.2	0.1	80.1	11.5	0.0
49.7	29.0	0.1	65.0	25.0	0.1	80.4	11.2	0.0
49.9	29.2	0.1	65.3	24.8	0.1	80.6	11.0	0.0
50.2	29.3	0.1	65.5	24.6	0.1	80.9	10.7	0.0
50.4	29.5	0.1	65.8	24.4	0.1	81.2	10.4	0.0
50.7	29.6	0.1	66.0	24.2	0.1	81.4	10.2	0.0
50.9	29.7	0.1	66.3	24.0	0.1	81.7	9.9	0.0
51.2	29.9	0.1	66.6	23.8	0.1	81.9	9.6	0.0
51.5	30.0	0.1	66.8	23.6	0.1	82.2	9.4	0.0
51.7	30.1	0.1	67.1	23.4	0.0	82.4	9.1	0.0
52.0	30.1	0.1	67.3	23.2	0.0	82.7	8.9	0.0
52.2	30.2	0.1	67.6	23.0	0.0	82.9	8.6	0.0
52.5	30.3	0.1	67.8	22.8	0.0	83.2	8.3	0.0
52.7	30.3	0.1	68.1	22.6	0.0	83.5	8.1	0.0
53.0	30.4	0.1	68.4	22.3	0.0	83.7	7.8	0.0
53.2	30.4	0.1	68.6	22.1	0.0	84.0	7.5	0.0
53.5	30.4	0.1	68.9	21.9	0.0	84.2	7.3	0.0
53.8	30.5	0.1	69.1	21.7	0.0	84.5	7.0	0.0
54.0	30.5	0.1	69.4	21.5	0.0	84.7	6.7	0.0
54.3	30.5	0.1	69.6	21.3	0.0	85.0	6.5	0.0
54.5	30.4	0.1	69.9	21.1	0.0	85.2	6.2	0.0
54.8	30.4	0.1	70.1	20.8	0.0	85.5	6.0	0.0
55.0	30.4	0.1	70.4	20.6	0.0	85.8	5.7	0.0
55.3	30.3	0.1	70.7	20.4	0.0	86.0	5.5	0.0
55.6	30.3	0.1	70.9	20.2	0.0	86.3	5.2	0.0
55.8	30.2	0.1	71.2	20.0	0.0	86.5	5.0	0.0
56.1	30.2	0.1	71.4	19.7	0.0	86.8	4.8	0.0
56.3	30.1	0.1	71.7	19.5	0.0	87.0	4.5	0.0
56.6	30.0	0.1	71.9	19.3	0.0	87.3	4.3	0.0
56.8	29.9	0.1	72.2	19.0	0.0	87.6	4.1	0.0
57.1	29.8	0.1	72.4	18.8	0.0	87.8	3.9	0.0
57.3	29.8	0.1	72.7	18.6	0.0	88.1	3.8	0.0
57.6	29.7	0.1	73.0	18.4	0.0	88.3	3.6	0.0
57.9	29.6	0.1	73.2	18.1	0.0	88.6	3.5	0.0
58.1	29.4	0.1	73.5	17.9	0.0	88.8	3.4	0.0
58.4	29.3	0.1	73.7	17.7	0.0	89.1	3.3	0.0
58.6	29.2	0.1	74.0	17.4	0.0	89.3	3.3	0.0
58.9	29.1	0.1	74.2	17.2	0.0	89.6	3.2	0.0
59.1	28.9	0.1	74.5	17.0	0.0	89.9	3.2	0.0
59.4	28.8	0.1	74.8	16.7	0.0	90.1	2.6	0.0
59.6	28.7	0.1	75.0	16.5	0.0	90.4	2.6	0.0
59.9	28.5	0.1	75.3	16.2	0.0	90.6	2.7	0.0
60.2	28.4	0.1	75.5	16.0	0.0	90.9	2.7	0.0
60.4	28.2	0.1	75.8	15.8	0.0	91.1	2.8	0.0
60.7	28.1	0.1	76.0	15.5	0.0	91.4	2.9	0.0
60.9	27.9	0.1	76.3	15.3	0.0	91.6	3.0	0.0
61.2	27.8	0.1	76.5	15.0	0.0	91.9	3.2	0.0