

TECHNICAL EXHIBIT
CONSTRUCTION PERMIT APPLICATION
MINOR MODIFICATION OF LICENSE
AMOR RADIO GROUP CORP.
FM STATION WXHD
SANTA ISABEL, PUERTO RICO
FACILITY ID 77881

June 5, 2018

CH 251A 6 KW HORIZ. 1.9 KW VERT. 153 M

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Technical Narrative

The technical exhibit of which this narrative is part has been prepared on behalf of Amor Radio Group Corp., licensee of FM broadcast station WXHD in Santa Isabel, Puerto Rico. By means of this application, Amor Radio Group Corp. seeks construction permit (CP) to make minor changes in the licensed facilities of WXHD. It is proposed to change transmitter site to a nearby site located 0.18 kilometers from the licensed site and to slightly modify the antenna HAAT. Specifications for the proposed operation are included herein as Figure 1.

It is proposed to mount the antenna on a proposed new tower to be constructed with 61 meters (200 ft.) of overall height AGL that according to the TOWAIR study, shown in Appendix 1, does not require registration. The antenna radiation center will be at a HAAT of 153 m AMSL, as per calculations performed using the FCC Web site HAAT Calculation tools, shown in Appendix 2. Upon completion of the required environmental studies and local construction permits, the applicant will certify that the proposed construction will not have a significant environmental impact, as defined by 47 CFR 1.1307. There are no AM stations within 7 kilometers of the proposed site, thus no adverse effects to AM stations will be caused by the proposed new tower.

It is believed that the proposal conforms to the applicable rules and regulations of the Federal Communications Commission.

Transmitter Location

The proposed transmitting facility will use the existing 8-bay elliptically polarized (75/25), full wavelength, Shively 6813 antenna, to be side-mounted at height of

48.2 m AGL on a new uniform cross-section, guyed tower. It is proposed to use an ERP of 6 kW horizontal polarization and 1.9 kW vertical polarization.

The following NAD27 geographic coordinates describe the proposed WXHD site location:

18° 01' 43.2" North Latitude
66° 21' 31.1" West Longitude

A map showing the location of the proposed transmitter site is included herein as Figure 2. A sketch showing the proposed antenna and supporting structure is included herein as Figure 3.

Quiet Zone Notification

As required by FCC rules pertaining to radio Quiet Zones, Section 73.1030(a), the National Astronomy and Ionosphere Center (NAIC) in Arecibo, Puerto Rico is being notified of the proposed modification. Copy of the notification letter to the Arecibo Observatory is included in Appendix 3. Copy of the consent letter from the Observatory is also included in Appendix 3.

Environmental Considerations

The proposed WXHD antenna will be side-mounted on a proposed new tower. The antenna RC will be located 48.2 meters above ground level with a height above mean sea level of 311.2 meters. A maximum radiated power (ERP) of 6 kW horizontal polarized and 1.9 kW vertical polarized is proposed.

With respect to the potential for human exposure to radio frequency (RF) energy, calculations prepared in accordance with FCC Bulletin OET-65.* Indicate that the proposal will not result in human exposure to RF energy at ground level in excess of FCC standards. The calculation at 2-m above ground was made using the following formula from the OET-65 document:

$$S = \frac{(33.4)F^2 P}{R^2}$$

* Federal Communications Commission OET Bulletin No. 65, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01, August 1997).

where, S = power density in $\mu\text{W}/\text{cm}^2$, F = relative field factor at the angle to the calculation point, P = the total effective radiated power relative to a dipole in watts, and R = distance from the antenna radiation center to the calculation point in meters. Based on a “worst-case” vertical relative field value of 0.25 for any depression angle greater than 10 degrees below the horizon (see Appendix 4, vertical plane radiation pattern), a total ERP of 7.9 kW (H+V) and an antenna center of radiation height above ground level of 48.2 meters, the calculated power density at two meters above ground level at the base of the tower is 7.7 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$), or 3.9 % of the Commission’s recommended limit applicable to uncontrolled exposure areas ($200 \mu\text{W}/\text{cm}^2$ for the FM band). Therefore, the proposal complies with the FCC limits for human exposure to RF energy.

Access to the tower will be restricted with a locked fence, appropriately marked with potential RF radiation exposure warning signs. There will be no other users on this tower; the proposed transmission facility, shall reduce power or cease operation altogether, as necessary, to prevent RF exposure above the FCC recommended limits.

FCC Monitoring Station at Santa Isabel

FCC rules pertaining to FCC monitoring stations, Section 73.1030(c), requires that the proposed facility does not produce a field strength greater than 10 mV/m at the FCC stations. Like the existing licensed facility, which over several years of operation has not caused any interference problems to the FCC monitoring station at Santa Isabel, the FCC monitoring station will be protected by the proposed WXHD facility.

The proposed effective radiated power (ERP) of the vertically-polarized component of the proposed facility will be similarly reduced to 1.9 kW. Since the receiving antenna of the Santa Isabel monitoring station is vertically-polarized, this reduction in the vertically-polarized ERP provides an adequate margin of additional protection of the monitoring station and helps to decouple the energy of the facility from sources that could produce spurious intermodulation products. Like the licensed facility, the reduction in vertically-polarized ERP in combination with the proposed antenna elevation pattern null directed toward the monitoring station will result in a predicted signal level at the monitoring station well below the FCC threshold levels for possible interference to the monitoring station. In addition, the applicant hereby explicitly states that it will make any ERP reductions, or any other necessary adjustments, to its facility as may be necessary to protect the Santa Isabel monitoring station from harmful interference resulting from its operation.

The FCC monitoring station at Santa Isabel, PR, is located at a distance of 2.82 kilometers on a bearing of 214.4° from the licensed WXHD facility, and is located at a distance of 2.89 kilometers on a bearing of 217.8° from the proposed WXHD facility (the

licensed and proposed facility are only 0.18 kilometers apart on sites with very similar elevations AMSL); thus the difference in bearing to the FCC monitoring station is only 3.4°. Considering the slight increase in antenna radiation center height of the proposed facility over the licensed facility of WXHD, it is estimated that the depression angle from the proposed transmitting antenna to the monitoring station will increase by only 0.4° from the licensed facility, from 4.9° to 5.3°. The proposed transmitting antenna will employ mechanical beam tilt of 3° (is 2.6° for the licensed antenna) at a true azimuth of 37.4° (34° for the licensed antenna) to place an elevation pattern null directly toward the FCC monitoring station.

Like for the licensed antenna, the combination of the transmitting antenna elevation pattern and the mechanical beam tilt, and the reduction in vertically-polarized ERP, will result in a predicted signal level at the monitoring station that is well below the required 88.6 dBu (27 mV/m) threshold specified in the construction permit of the existing facility.

Based on the above, it is reasonably expected that the proposal will provide adequate protection of the of the Santa Isabel monitoring station with a good level of margin based on a reduction of the vertically-polarized component of ERP to 1.9 kW. In addition, the applicant has stated that it will make any additional ERP reductions, or any other necessary adjustments in its facility as may be necessary to protect the Santa Isabel monitoring station. The applicant respectfully requests that the FCC issue a construction permit with a condition requiring protection of the Santa Isabel monitoring station as was issued in Construction Permit No. BMPH-20111221AFL, Condition No. 3.

Allocation Considerations

Figure 4 summarizes the allocation study for the proposed facility of WXHD. Figure 4a shows the current licensed channel allocation and Figure 4b shows the allocation situation of the proposed facility. As shown in Figure 4b, the proposed facility of WNIK-FM will comply with protection requirements regarding IF channel separations.

The proposed facility does not meet the normal allocation spacing of Section 73.207 to two adjacent channels: Channel 252A, WZOL in Las Piedras and Channel 254B, WUKQ-FM in Mayaguez, both of which are discussed below.

With respect to the Channel 254B Mayaguez, it is requested that this proposal be treated as per the provisions of Section 73.215. Section 73.215 requires a minimum spacing of 63 kilometers to WUKQ-FM; there are 68 kilometers between the proposed site and WUKQ-FM. Since WUKQ-FM is not a 73.215 facility, contour protections with WUKQ-FM

were studied to the maximum facilities specified for its class, as per the provisions of Section 73.211(b)(3): 50 kW with a reference HAAT of 472 meters. As shown in Figure 5, the proposed WXHD facility is in compliance with the requirements of Section 73.215 with WUKQ-FM.

With respect to the Channel 251A in Las Piedras, it is requested that the WXHD proposal be treated as per the provisions of Section 73.215. Section 73.215 requires a minimum spacing of 49 kilometers to WZOL; there are 60.2 kilometers between the proposed site and WZOL. Since WZOL is listed as a 73.215 facility, contour protections with WZOL were studied to its actual facilities. As shown in Figure 6, the proposed WNIK-FM facility is in compliance with the requirements of Section 73.215.

City Coverage and Impact on Radio Multiple Ownership

Figure 7 is a map showing the predicted coverage contours of the licensed and proposed facilities of WXHD. The proposed 70 dBu will encompass 100% of the City and of the Municipality of Santa Isabel (obtained from the 2010 Census). A study of line-of-sight conditions with the city of Santa Isabel from the proposed site shows that line-of-sight conditions are fully adequate. The use of mechanical beam tilt will not affect the predicted 70 dBu coverage of Santa Isabel. A tabulation of the predicted distances to the 70 dBu contour is shown in Appendix 5.

The proposed site change is only 0.18 kilometers of the existing, licensed site. As can be appreciated in Figure 7, the coverage of WXHD is essentially unchanged and will have no impact in the situation of Amor Radio Group Corp. as to Radio Multiple Ownership.

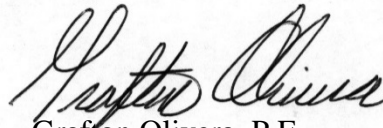
Coverage, Protected and Interfering Contours

The predicted coverage, protected and interfering contours were calculated in accordance with the provisions of 47 CFR 73.313. In accordance with current FCC practice, no consideration was given to terrain roughness correction factors.

The “blanketing” contour for a 6 kilowatt FM station, as defined by 47 CFR 73.318, extends approximately 1 kilometers from the transmitter site. There are no FM or TV stations within this distance. Therefore, no receiver-induced inter-modulation interference or blanketing interference is expected, however, the applicant recognizes its responsibility to

remedy complaints of blanketing interference as required by 47 CFR 73.318 and to protect existing facilities in accordance with applicable rules.

The predicted contours were calculated in accordance with Section 73.313 of the FCC Rules, using the V-Soft FMCommander@2016 software in conjunction with the 30-second Global terrain database; contour calculation were made using an evenly spaced set of 72 radials. The antenna height elevation above average terrain of the current CP, adjusted for the proposed RC height increase, was used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours.

A handwritten signature in black ink, appearing to read 'Grafton Olivera', is centered on the page.

Grafton Olivera, P.E.
Consulting Engineer
5119 60th Drive E
Bradenton, Florida 34203

(941) 323-0321

June 5, 2017

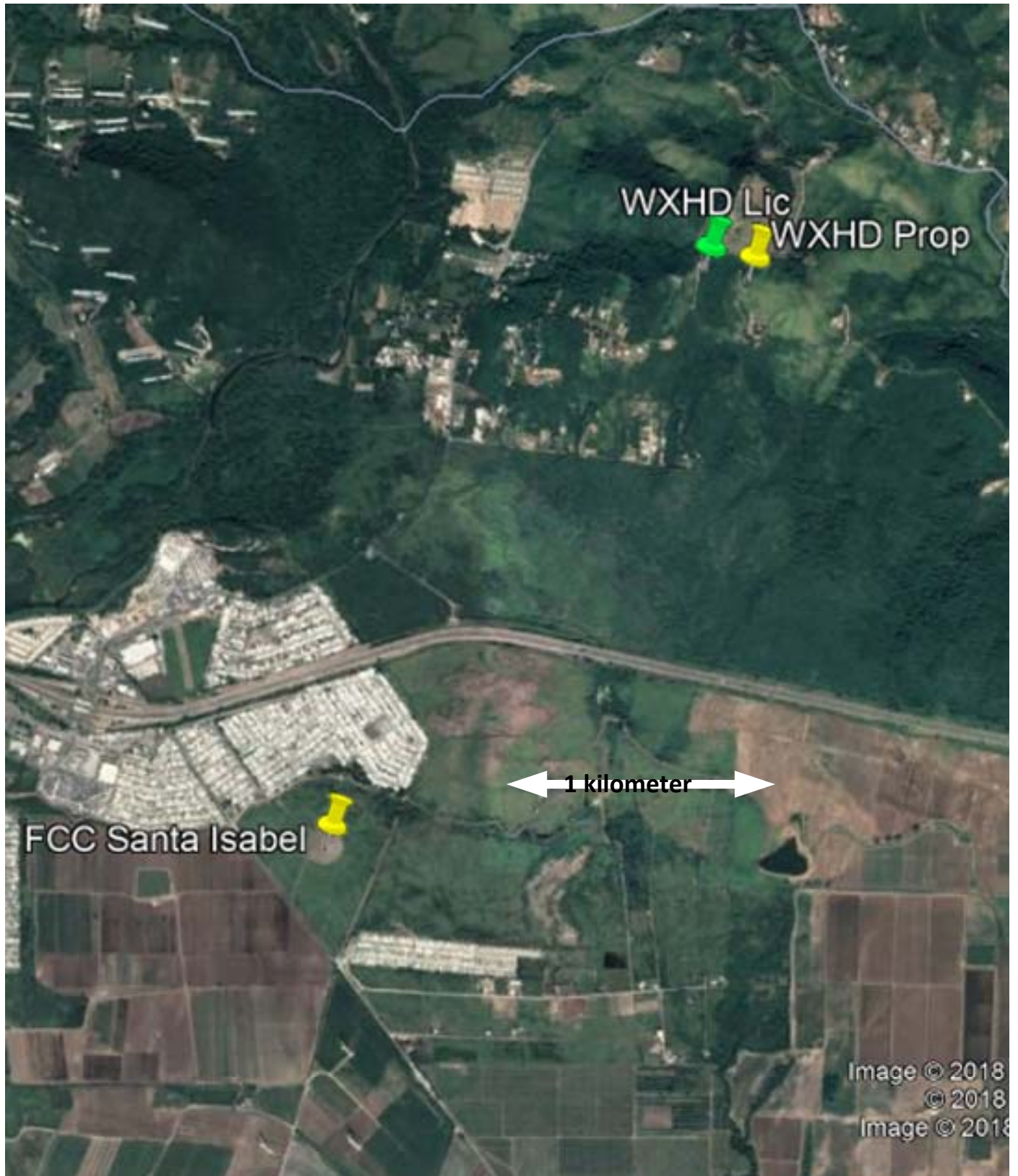
Figure 1

TECHNICAL EXHIBIT
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FM STATION WXHD
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CH 251A 6 KW HORIZ. 1.9 KW VERT. 153 M

Engineering Specifications

Channel / Frequency	251A / 98.1 MHz
Site Coordinates (NAD27)	18° 01' 43.2" North Latitude 66° 21' 31.1" West Longitude
Site elevation	263 m AMSL
Overall height of antenna structure	61 m AGL / 324 m AMSL
Height of antenna radiation center	48.2 m AGL / 311.2 m AMSL
Antenna radiation center HAAT	153 m AMSL
Transmitter	Type Approved
Transmitter power output	3.9 kW
Transmission line, 1-5/8" air-dielectric	Andrew, HJ7-50A
Transmission line length	67 m
Transmission line efficiency	90.3 %
Antenna	Shively 6813-8-H/V (75/25)
Polarization	Elliptical (75/25)
Power gain	3.4 Hpol / 1.1 Vpol
Antenna input power	3.5 kW
Effective radiated power	6 kW Hpol, 1.9 kW Vpol

Figure 2



PROPOSED TRANSMITTER SITE

AMOR RADIO GROUP CORP.

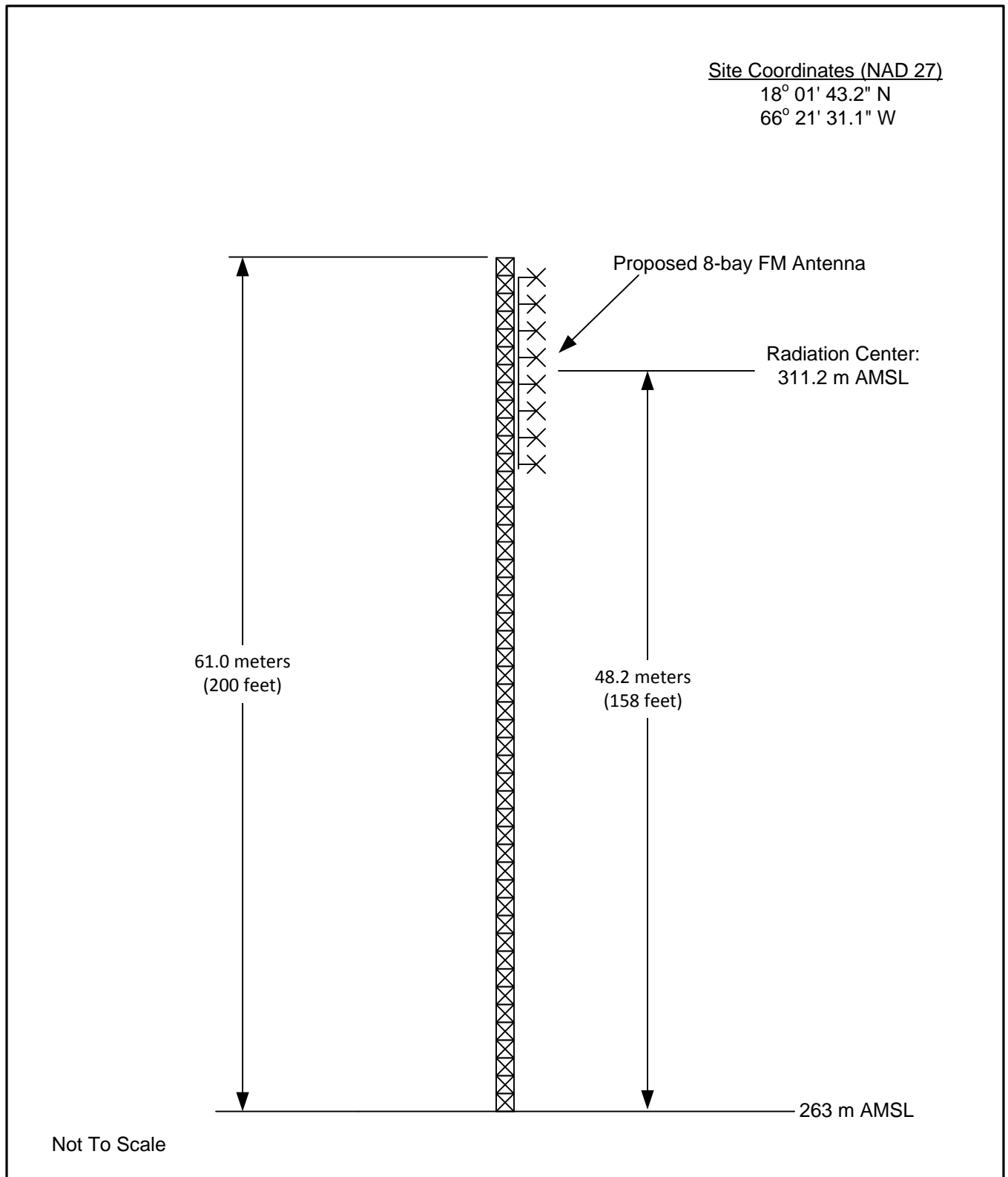
FM STATION WXHD

SANTA ISABEL, PUERTO RICO

CH 251A 6 KW HPOL / 1.9 KW VPOL 153 M HAAT

Grafton Olivera, P.E. – Consulting Engineer

Figure 3



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

AMOR RADIO GROUP CORP.
FM STATION WXHD
SANTA ISABEL, PUERTO RICO
CH 251A 6 KW HPOL / 1.9 KW VPOL 153 M HAAT

Grafton Olivera, P.E. – Consulting Engineer

Figure 4a

ALLOCATION STUDY – LICENSED FACILITY WXHD

WXHD LICENSED ALLOCATION SUMMARY

IX Issue! FCC Mon. Arecibo

GLOBE 30 Sec

DATA: 06-04-18 - Zone 1A

Call	Type	Ch	Location	Azi	Dist	In	Out
WXHD	LIC-N	251A	Santa Isabel	PR	0.0	0.00	114.5R -114.5M
WUKQ-FM1	LIC	254D	Ponce	PR	261.1	28.07	-15.0* 5.4
WNVM-FM1	LIC-D	249D	Cayey	PR	72.1	18.71	2.9 13.1
WZCL-LP«	CP	251L1	Cabo Rojo-mayag	PR	277.5	84.33	79.5R 4.8M
WZCL-LP«	LIC	251L1	Cabo Rojo	PR	277.4	84.39	79.5R 4.9M
WCXQ-LP«	LIC	251L1	Isabela-quebrad	PR	306.3	84.41	79.5R 4.9M
WUKQ-FM^	LIC	254B	Mayaguez	PR	281.7	67.78	5.8 11.0
WZOL-FM3	LIC-D	252D	Fajardo	PR	64.6	78.72	57.2 51.2
WNVM«	LIC-N	249A	Cidra	PR	43.4	38.40	30.5R 7.9M
WNVM«	CP-N	249A	Cidra	PR	43.6	38.42	30.5R 7.9M
WZOL	LIC-Z	252A	Las Piedras	PR	62.4	60.35	11.2 24.8
W250CF	LIC	250D	Arecibo	PR	319.6	58.14	18.9 25.3

End of Screen List, Cardinal Radials = 72

WXHD LICENSED ALLOCATION REPORT

REFERENCE CH# 251A - 98.1 MHz, Pwr= 6 kW, HAAT= 133.0 M, COR= 286 M DISPLAY DATES 18
 01 45.0 N. Average Protected F(50-50)= 32.14 km DATA 06-04-18
 66 21 37.0 W. 73.215 Omni-directional SEARCH 06-04-18

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
251A Santa Isabel	WXHD	LIC NE PR	0.0	0.00	18 01 45.0	6.000	286	---Reference---		
			0.0	BLH20140806AAW	66 21 37.0	133		Amor Radio Group Corp		
254D Ponce	WUKQ-FM1	LIC C PR	261.1	28.07	17 59 23.0	3.800	1.8	17.8	-15.0*	5.4
			81.0	BLFTB20130325AML	66 37 21.0		59	Wii/wsur License Partners		
249D Cayey	WNVM-FM1	LIC DC PR	72.1	18.71	18 04 51.0	0.021	0.0	3.3	2.9	13.1
			252.1	BLFTB20101004AAE	66 11 31.0		860	New Life Broadcasting, Inc		
251L1 Cabo Rojo-mayaguez	WZCL-LP«	CP PR	277.5	84.33	18 07 36.3	0.100			79.5R	4.8M
			97.3	BPL20170913ABT	67 09 01.4	30	82	Clubradio Pr Community Inc		
251L1 Cabo Rojo	WZCL-LP«	LIC PR	277.4	84.39	18 07 32.0	0.029			79.5R	4.9M
			97.2	BLL20141229ACS	67 09 04.0	55	107	Clubradio Pr Community Inc		
251L1 Isabela-quebradilla	WCXQ-LP«	LIC PR	306.3	84.41	18 28 40.3	0.100			79.5R	4.9M
			126.1	BLL20180103AAA	67 00 20.5	30	115	Community Action Corp.		
254B Mayaguez	WUKQ-FM^	LIC CX PR	281.7	67.78	18 09 05.0	50.000	13.4	44.2	5.8	11.0
			101.5	BLH20130104ABI	66 59 19.0	472	770	Wii/wsur License Partners		
252D Fajardo	WZOL-FM3	LIC DV PR	64.6	78.72	18 19 54.0	0.166	5.8	4.0	57.2	51.2
			244.8	BLFTB20131231AEN	65 41 11.0		375	Radio Sol 92, Wzol, Inc.		
249A Cidra	WNVM«	LIC NCX PR	43.4	38.40	18 16 49.3	3.000	1.6	18.7	30.5R	7.9M
			223.5	BMLH20120710ACQ	66 06 35.3	333	553	New Life Broadcasting, Inc		
249A Cidra	WNVM«	CP NCX PR	43.6	38.42	18 16 47.4	3.000	1.6	19.1	30.5R	7.9M
			223.6	BPH20170127ABN	66 06 32.5	339	558	New Life Broadcasting, Inc		
252A Las Piedras	WZOL	LIC ZCX PR	62.4	60.35	18 16 48.0	0.830	30.5	20.1	11.2	24.8
			242.6	BLH20120514ADR	65 51 13.0	574	799	Radio Sol 92, Wzol, Inc.		
250D Arecibo	W250CF	LIC C PR	319.6	58.14	18 25 40.0	0.230	13.2	6.9	18.9	25.3
			139.5	BLFT20161121ADT	66 43 06.0		205	Aurio A Matos Barreto		

Terrain database is GLOBE 30 Sec, R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 In & Out distances between contours are shown at closest points. Reference zone= - Zone 1A, Co to 3rd adjacent.
 All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beam tilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
 « = Station meets FCC minimum distance spacing for its class.
 ^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements

Figure 4b

ALLOCATION STUDY – PROPOSED FACILITY WXHD

WXHD PROPOSED ALLOCATION SUMMARY

IX Issue!
FCC Mon. -Arecibo

GLOBE 30 Sec



DATA: 06-04-18 - Zone 1A

N. Lat. 18 01 43.2	311.2 m COR	Contours are detailed	Santa Isabel PR	M	WXHD FM PROP -
W. Lng. 66 21 31.1	6.0 kW N	CH 251.98.1	153.0 m HAAT	*	WXHD 06-04-18

Call	Type	Ch	Location		Azi	Dist	In	Out
WXHD	LIC-N	251A	Santa Isabel	PR	287.8	0.18	114.5R	-114.3M
WUKQ-FM1	LIC	254D	Ponce	PR	261.2	28.23	-16.5*	5.5
WNVM-FM1	LIC-D	249D	Cayey	PR	71.8	18.56	2.5	12.9
WUKQ-FM^	LIC	254B	Mayaguez	PR	281.7	67.96	3.9	11.1
WZCL-LP«	CP	251L1	Cabo Rojo-mayag	PR	277.5	84.51	79.5R	5.0M
WZCL-LP«	LIC	251L1	Cabo Rojo	PR	277.5	84.57	79.5R	5.1M
WCXQ-LP«	LIC	251L1	Isabela-quebrad	PR	306.3	84.58	79.5R	5.1M
WZOL-FM3	LIC-D	252D	Fajardo	PR	64.5	78.59	57.1	51.1
WNVM«	LIC-N	249A	Cidra	PR	43.2	38.33	30.5R	7.8M
WNVM«	CP-N	249A	Cidra	PR	43.3	38.34	30.5R	7.8M
WZOL	LIC-Z	252A	Las Piedras	PR	62.3	60.22	9.4	23.6
W250CF	LIC	250D	Arecibo	PR	319.5	58.29	17.3	18.5

End of Screen List, Cardinal Radials = 72

WXHD PROPOSED ALLOCATION REPORT

REFERENCE CH# 251A - 98.1 MHz, Pwr= 6 kW, HAAT= 153.0 M, COR= 311.2 M DISPLAY DATES 18
 01 43.2 N. Average Protected F(50-50)= 34.42 km DATA 06-04-18
 66 21 31.1 W. 73.215 Omni-directional SEARCH 06-04-18

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
251A Santa Isabel	WXHD	LIC NE_ PR	287.8 107.8	0.18 BLH20140806AAW	18 01 45.0 66 21 37.0	6.000 133	286	---Reference---		Amor Radio Group Corp
254D Ponce	WUKQ-FM1	LIC _C_ PR	261.2 81.1	28.23 BLFTB20130325AML	17 59 23.0 66 37 21.0	3.800	1.8 59	17.9	-16.5*	5.5 Wlii/wsur License Partners
249D Cayey	WNVM-FM1	LIC DC_ PR	71.8 251.8	18.56 BLFTB20101004AAE	18 04 51.0 66 11 31.0	0.021	0.0 860	3.3	2.5	12.9 New Life Broadcasting, Inc
254B Mayaguez	WUKQ-FM^	LIC _CX PR	281.7 101.5	67.96 BLH20130104ABI	18 09 05.0 66 59 19.0	50.000 472	13.4 770	44.2	3.9	11.1 Wlii/wsur License Partners
251L1 Cabo Rojo-mayaguez	WZCL-LP«	CP PR	277.5 97.3	84.51 BPL20170913ABT	18 07 36.3 67 09 01.4	0.100 30	82		79.5R	5.0M Clubradio Pr Community Inc
251L1 Cabo Rojo	WZCL-LP«	LIC PR	277.5 97.2	84.57 BLL20141229ACS	18 07 32.0 67 09 04.0	0.029 55	107		79.5R	5.1M Clubradio Pr Community Inc
251L1 Isabela-quebradilla	WCXQ-LP«	LIC PR	306.3 126.1	84.58 BLL20180103AAA	18 28 40.3 67 00 20.5	0.100 30	115		79.5R	5.1M Community Action Corp.
252D Fajardo	WZOL-FM3	LIC DV_ PR	64.5 244.7	78.59 BLFTB20131231AEN	18 19 54.0 65 41 11.0	0.166	5.8 375	4.0	57.1	51.1 Radio Sol 92, Wzol, Inc.
249A Cidra	WNVM«	LIC NCX PR	43.2 223.3	38.33 BMLH20120710ACQ	18 16 49.3 66 06 35.3	3.000 333	1.6 553	18.6	30.5R	7.8M New Life Broadcasting, Inc
249A Cidra	WNVM«	CP NCX PR	43.3 223.4	38.34 BPH20170127ABN	18 16 47.4 66 06 32.5	3.000 339	1.6 558	19.1	30.5R	7.8M New Life Broadcasting, Inc
252A Las Piedras	WZOL	LIC ZCX PR	62.3 242.4	60.22 BLH20120514ADR	18 16 48.0 65 51 13.0	0.830 574	30.6 799	20.1	9.4	23.6 Radio Sol 92, Wzol, Inc.
250D Arecibo	W250CF	LIC _C_ PR	319.5 139.4	58.29 BLFT20161121ADT	18 25 40.0 66 43 06.0	0.230	12.9 205	6.9	17.3	18.5 Aurio A Matos Barreto

Terrain database is GLOBE 30 Sec, R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 In & Out distances between contours are shown at closest points. Reference zone= - Zone 1A, Co to 3rd adjacent.
 All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.
 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.
 ^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements

Figure 5

CONTOUR PROTECTION WXHD 251A / WUKQ-FM 254B

WUKQ-FM: 64 dBu Protected (black) / 94 dBu Interfering (red)
WXHD: 54 dBu Protected (black) / 104 dBu Interfering (red)

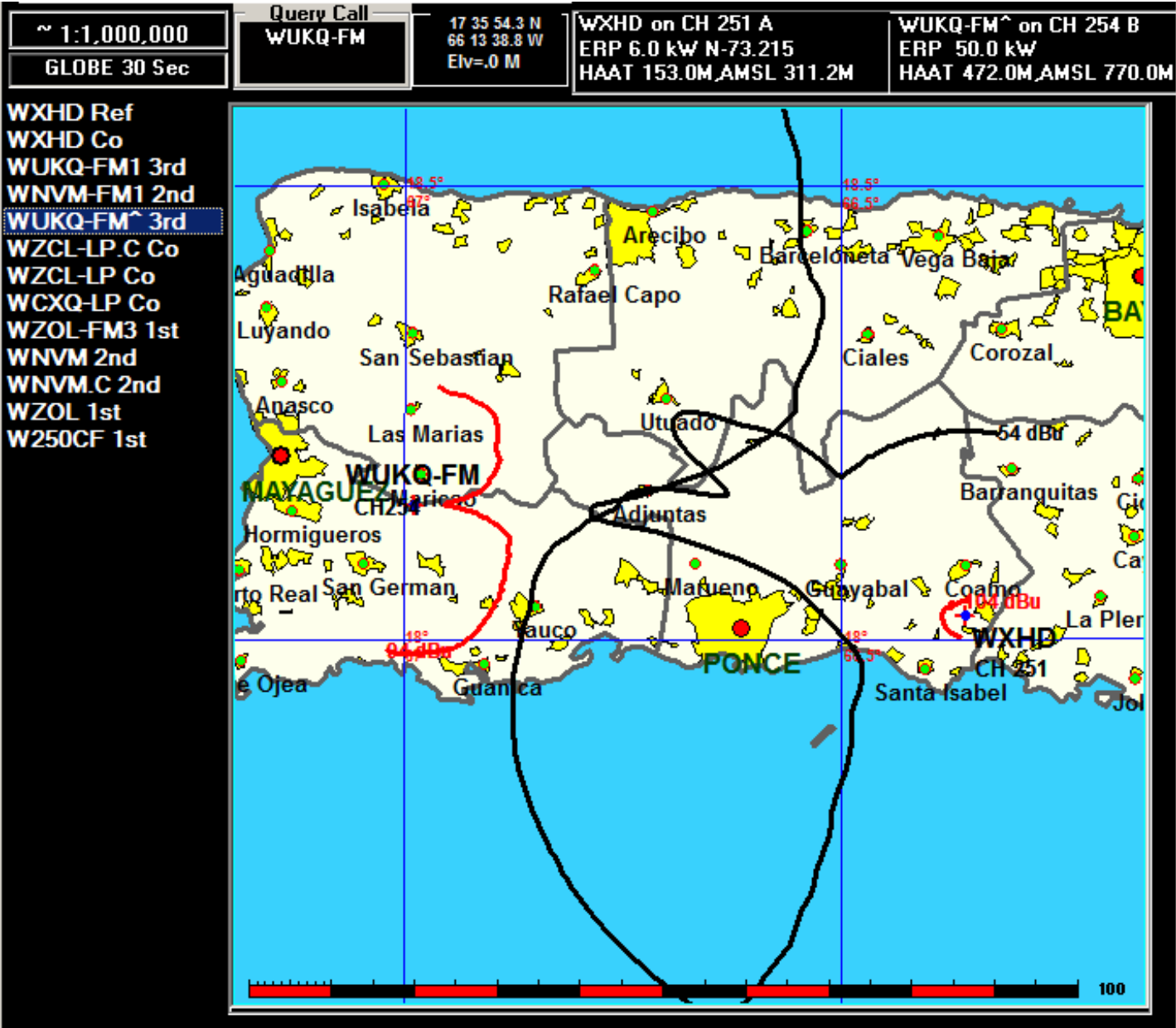


Figure 6

CONTOUR PROTECTION WXHD 251A / WZOL 252A

WZOL: 67 dBu Protected (black) / 61 dBu Interfering (red)

WXHD: 67 dBu Protected (black) / 61 dBu Interfering (red)

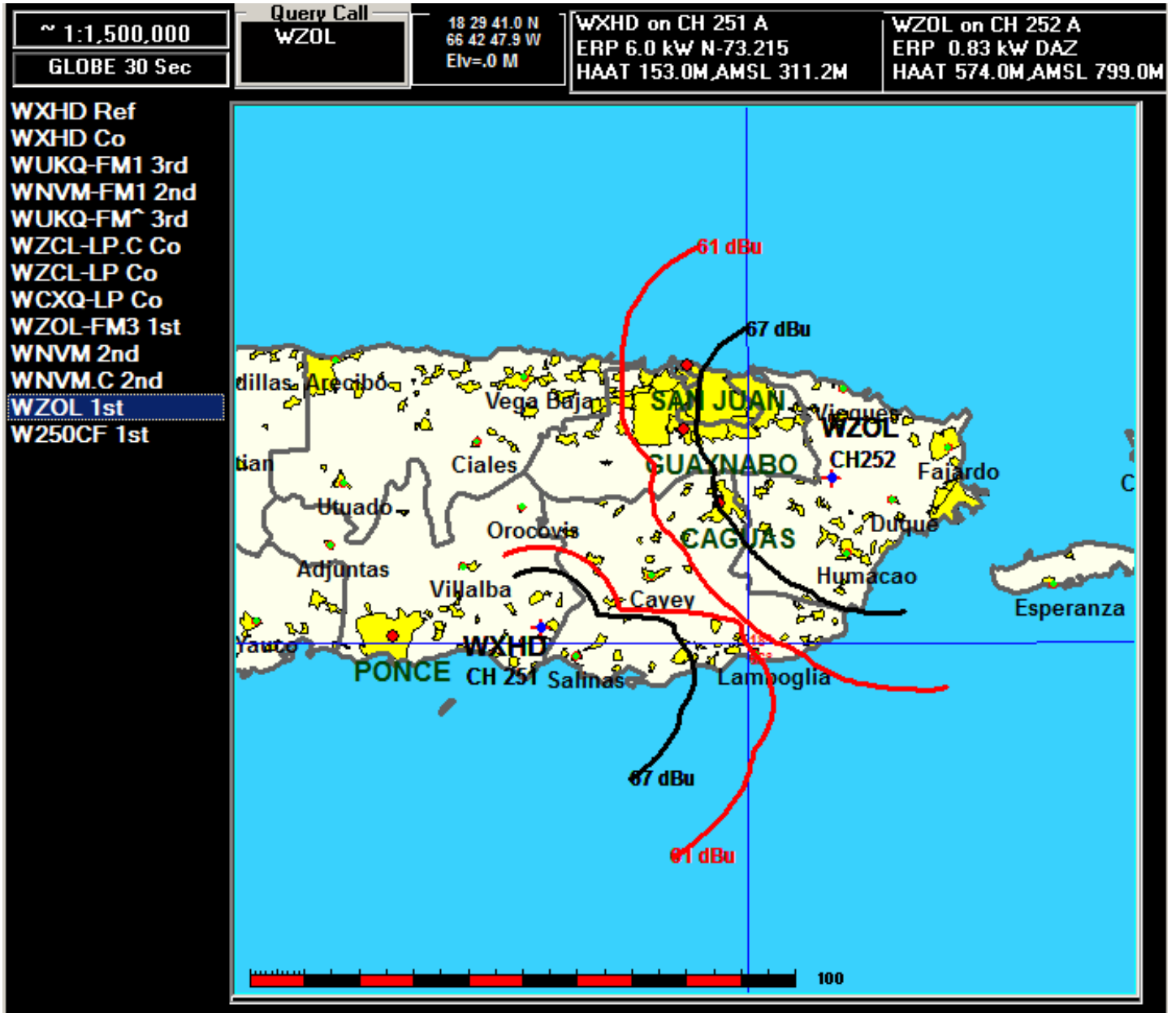
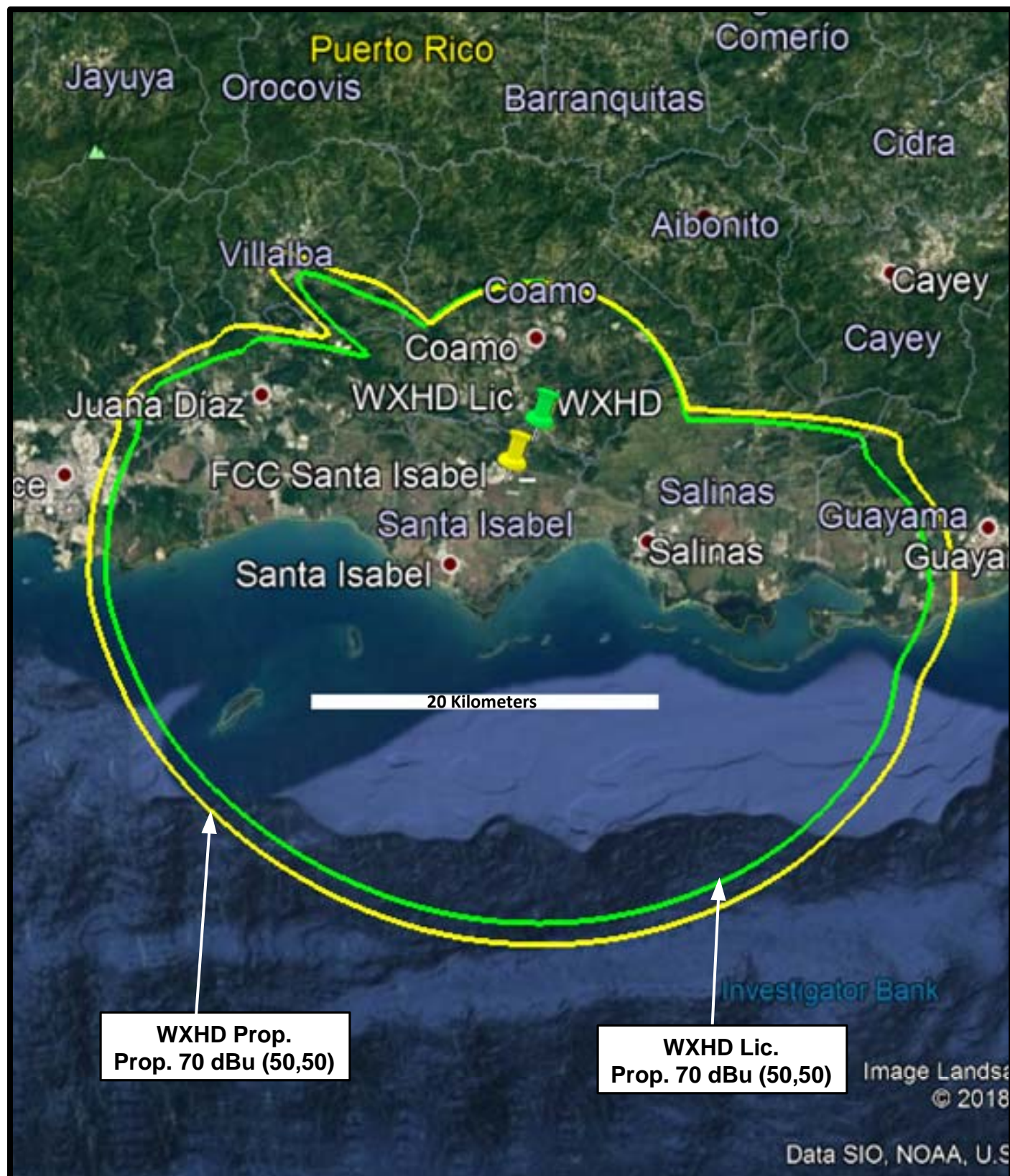


Figure 7



PREDICTED COVERAGE CONTOUR

FM STATION WXHD
 SANTA ISABEL, PUERTO RICO
 CH 251A 6 KW HPOL / 1.9 KW VPOL 153 M HAAT
 Grafton Olivera, P.E. – Consulting Engineer

TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	18-01-36.1 north
Longitude	066-21-29.7 west

Measurements (Meters)

Overall Structure Height (AGL)	61
Support Structure Height (AGL)	1
Site Elevation (AMSL)	263

Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

Tower Construction Notifications

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

Antenna Height Above Average Terrain Calculations -- Results**Input Data**Latitude **18° 1' 36.1"** NorthLongitude **66° 21' 29.7"** West (NAD 83)Height of antenna radiation center above mean sea level: **311.2** meters ~~AMSL~~Number of Evenly Spaced Radials = **8** 0° is referenced to True North**Results**Calculated HAAT = **153 meters**Antenna Height Above Average Terrain calculated
using 1 km [GLOBE terrain data](#)**Individual "Radial HAAT" Values, in meters**

0°	-44.8 m
45°	-77.4 m
90°	161.1 m
135°	288.0 m
180°	305.2 m
225°	300.1 m
270°	226.3 m
315°	62.8 m

Appendix 3

Grafton Olivera, P.E.

Consulting Engineer

June 5, 2018

Via email (prcz@naic.edu)

Angel M. Vázquez, Spectrum Manager
National Astronomy and Ionosphere Center
Arecibo Observatory
HC3 Box 53995
Arecibo, PR 00612

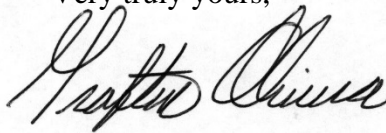
Gentlemen:

On behalf of our client, Amor Radio Group Corp., licensee of WXHD in Santa Isabel, Puerto Rico, in accordance with Section 73.1030 of FCC Rules, we hereby notify of a proposed Construction Permit (CP) for WXHD. The particulars of the proposal are as follows:

Geographical coordinates of antenna location (NAD27): 18-01-43.2 / 66-21-31.1
Antenna height: 48.2 m AGL; 311.2 m AMSL
Antenna Gain (horizontal plane): 0 dBd (non-directional)
Operating channel: 251, 98.1 MHz
Type of emission: F3E
Effective isotropic radiated power: 9.8 kW Hpol / 3.1 kW Vpol - (75/25 Elliptical Polarization)

Please review this proposal and let me know your findings; feel free to communicate via email (<mailto:Grafton.Olivera@me.com>), telephone (941-323-0381) or regular mail.

Very truly yours,



Grafton Olivera, P.E.
5119 60th Drive E
Bradenton, FL 34203

Tel. 941-323-0381
Email: Grafton.Olivera@me.com

ARECIBO OBSERVATORY

The William E. Gordon Telescope
Angel Ramos Foundation Science and Visitor Center



June 6, 2018

Mr. Grafton Olivera, P.E.
Consulting Engineer
5119 60th Drive E
Bradenton, FL 34203

Re: Amor Radio Group Corp
FM Station WXHD,
Construction Permit
Santa Isabel, Puerto Rico

Dear Eng. Olivera:

Thank you very much for your PRCZ approval request sent to us in accordance with the Puerto Rico Coordination zone agreements. We have considered the technical aspects of your application and find that the proposed changes are unlikely to cause harmful interference to the passive use of the Radio Astronomy bands at the Arecibo Observatory..

We therefore have no objections to your proposed installation.

Sincerely yours,

Angel M. Vázquez
Spectrum Manager

AMV

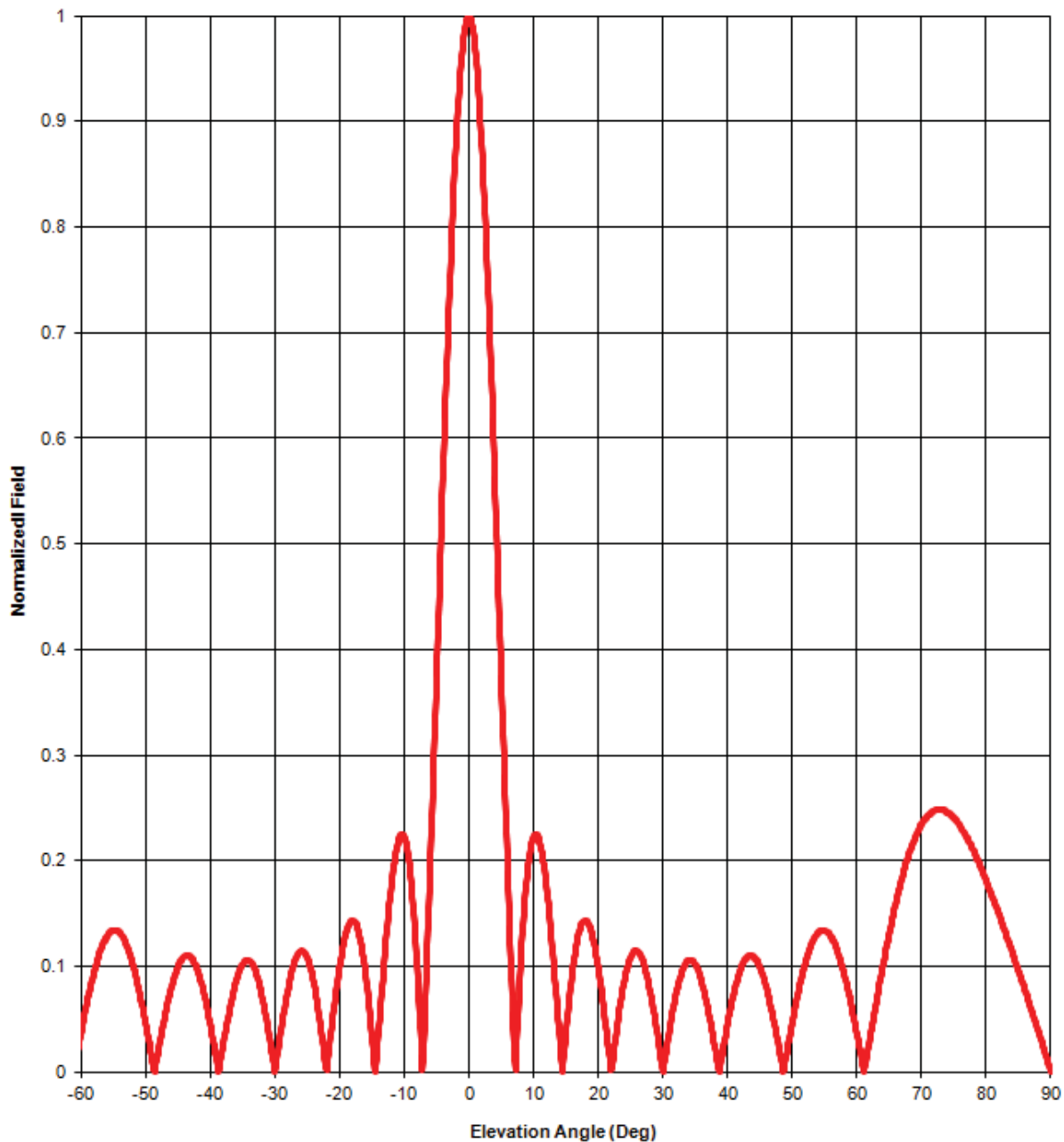
Cc: PRCZ files [File #06jun18_01]

Appendix 4

TECHNICAL EXHIBIT
CONSTRUCTION PERMIT APPLICATION
MINOR MODIFICATION OF LICENSE
AMOR RADIO GROUP CORP.
FM STATION WXHD
SANTA ISABEL, PUERTO RICO
FACILITY ID 77881
CH 251A 6 KW HORIZ. 1.9 KW VERT. 153 M

Antenna Manufacturer Vertical Radiation Pattern

Elevation pattern



Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, 68xx except 6832, & Versa2une, 8-bay full-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

	Power	dB
6014, 6015, 68xx:	4.53	6.56 dB
6510, 6513, 6600:	9.06	9.56 dB

[Document No. 68xx 8-bay fw \(130628\)](#)

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Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.969	19	0.132	37	0.059	55	0.134	73	0.249
2	0.878	20	0.099	38	0.026	56	0.128	74	0.246
3	0.738	21	0.053	39	0.011	57	0.114	75	0.241
4	0.565	22	0.002	40	0.046	58	0.094	76	0.232
5	0.375	23	0.047	41	0.075	59	0.067	77	0.222
6	0.190	24	0.085	42	0.097	60	0.037	78	0.210
7	0.027	25	0.109	43	0.109	61	0.003	79	0.196
8	0.102	26	0.115	44	0.110	62	0.031	80	0.182
9	0.186	27	0.104	45	0.100	63	0.066	81	0.166
10	0.223	28	0.078	46	0.080	64	0.100	82	0.149
11	0.217	29	0.042	47	0.053	65	0.131	83	0.132
12	0.176	30	0.001	48	0.021	66	0.160	84	0.114
13	0.111	31	0.039	49	0.013	67	0.185	85	0.096
14	0.036	32	0.073	50	0.047	68	0.206	86	0.078
15	0.036	33	0.096	51	0.077	69	0.222	87	0.059
16	0.094	34	0.106	52	0.103	70	0.235	88	0.040
17	0.132	35	0.102	53	0.121	71	0.243	89	0.021
18	0.144	36	0.086	54	0.132	72	0.248	90	0.000

Elevation Pattern Tabulation

Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, 68xx except 6832, & Versa2une, 8-bay full-wave-spaced.

Relative Field at 0° Depression = 1.000

Appendix 5

TABULATION OF CALCULATION OF 70 DBU CONTOUR - WXHD PROPOSED

N. Lat. = 180143.2 W. Lng. = 662131.1

HAAT and Distance to Contour,

FCC, FM 2-10 Mi, 51 pts Method - GLOBE 30 SEC

AZIM.	AV. ELEV.	ERP kW	70 dBu F5050
0	365.2	6.0	8.92
5	385.3	6.0	8.92
10	381.5	6.0	8.92
15	393.4	6.0	8.92
20	404	6.0	8.92
25	400.9	6.0	8.92
30	407.9	6.0	8.92
35	388.7	6.0	8.92
40	385.7	6.0	8.92
45	393.9	6.0	8.92
50	407.7	6.0	8.92
55	411.6	6.0	8.92
60	431.5	6.0	8.92
65	446.9	6.0	8.92
70	335.4	6.0	8.92
75	299.6	6.0	8.92
80	269	6.0	10.53
85	210.4	6.0	16.24
90	148.5	6.0	20.85
95	133.9	6.0	21.7
100	98.1	6.0	23.56
105	76.3	6.0	24.69
110	59.4	6.0	25.5
115	54.9	6.0	25.71
120	56.6	6.0	25.63
125	42.6	6.0	26.27
130	27.7	6.0	26.95
135	21.1	6.0	27.25
140	16	6.0	27.47
145	11.7	6.0	27.67
150	8.6	6.0	27.81
155	6.9	6.0	27.88
160	6	6.0	27.92
165	5.4	6.0	27.95
170	4.9	6.0	27.97
175	4.8	6.0	27.98

AZIM.	AV. ELEV.	ERP kW	70 dBu F5050
180	5.3	6.0	27.95
185	6	6.0	27.92
190	6.6	6.0	27.9
195	7.5	6.0	27.86
200	8.5	6.0	27.81
205	9.4	6.0	27.77
210	9.9	6.0	27.75
215	10.2	6.0	27.74
220	10.5	6.0	27.72
225	10.5	6.0	27.72
230	11	6.0	27.7
235	12.5	6.0	27.63
240	16.4	6.0	27.46
245	20.6	6.0	27.27
250	24.9	6.0	27.08
255	34.7	6.0	26.63
260	49.4	6.0	25.96
265	65.7	6.0	25.2
270	84.9	6.0	24.25
275	94.5	6.0	23.75
280	119.7	6.0	22.43
285	157.4	6.0	20.29
290	179.4	6.0	18.76
295	230.9	6.0	14.3
300	220.3	6.0	15.28
305	184.2	6.0	18.41
310	222.9	6.0	15.04
315	250.9	6.0	12.57
320	300.4	6.0	8.92
325	319.9	6.0	8.92
330	327.6	6.0	8.92
335	335	6.0	8.92
340	401	6.0	8.92
345	418.8	6.0	8.92
350	390.3	6.0	8.92
355	364	6.0	8.92

Ave El= 172.55 M HAAT= 153 M AMSL= 311.2 M