



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION FOR  
POST REPACK CONSTRUCTION PERMIT  
WVOZ-TV - PONCE, PUERTO RICO  
DTV - CH. 36 - 25 kW - 250 m HAAT**

Prepared for: SPANISH BROADCASTING SYSTEM HOLDING COMPANY, INC.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by SPANISH BROADCASTING SYSTEM HOLDING COMPANY, INC., licensee of WVOZ-TV, channel 47, facility ID number 29000, licensed to Ponce, Puerto Rico, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for construction permit, in accordance with the Incentive Auction Closing and Channel Reassignment Public Notice, DA 17-314, and the technical information provided in the confidential reassignment letter from the FCC announcing the substitution for DTV channel 47 with new DTV channel 36 to be used by WVOZ-TV for its post-reassignment broadcasting.

## **DIRECTIONAL ANTENNA**

The applicant proposes to install a new PSI model PSILP16AP-36 horizontally polarized directional transmitting antenna with its center of radiation located at a height above ground of 30 meters, and a height above average terrain of 250 meters. The antenna manufacturer's directional horizontal plane azimuth radiation pattern for the horizontally polarized component is shown and tabulated in exhibits 2 and 3. The manufacturer's vertical plane elevation radiation pattern, illustrating the antenna's radiation characteristics above and below the horizontal plane is shown and tabulated in Exhibits 4 and 5.

## **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 shows the predicted Noise Limited (40.86 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Ponce, Puerto Rico.

## **ALLOCATION CONSIDERATIONS**

### ***Post-Transition DTV Considerations***

A study was performed, using the FCC's software, tv\_study, v. 2.2.2, to determine if the instant application for construction permit is predicted to cause new prohibited interference to post reassignment DTV stations, construction permits, DTV allotments or Class A DTV stations. The study results, shown in Appendix B, indicate that the instant application for construction permit is predicted to cause no new interference exceeding 0.5% to the populations served by any post reassignment DTV station, construction permit, allotment or Class A DTV stations. The study also shows that WVOZ-TV's "\*\*\*Proposal service area extends beyond baseline plus 1.0%". However, exhibit 6 shows that the proposed contour is within the station's licensed noise limited contour. (See Appendix B)

### ***International DTV Considerations***

The WVOZ-TV site is located more than 2,400 kilometers from the nearest points on both the US-Mexican border and the nearest point on the US-Canadian border.

## **BLANKETING AND INTERMODULATION INTERFERENCE**

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the proposed WVOZ-TV site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

## **RADIO\_FREQUENCY IMPACT**

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations, and for "uncontrolled" environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHz and 300 MHz is 200 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for an "uncontrolled" environment, and is 1000 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for a "controlled" environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHz and 1500 MHz, primarily UHF TV stations, is determined for an "uncontrolled" environment by dividing the operating frequency in MHz by 1.5, and is similarly determined for a "controlled" environment by dividing the operating

**STATEMENT OF JOHN E. HIDLE, P.E.**  
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frequency in MHZ by 0.3.

The WVOZ-TV transmit antenna is located at a multiple-use transmitter site. In accordance with Section 1.1307(b) of the FCC Rules, "when performing an evaluation for compliance with the FCC RF guidelines all significant contributors to the ambient RF environment should be considered". As discussed below, the WVOZ-TV predicted power density contribution at the multiple-use site is not considered significant and does not require consideration.

As shown on the vertical elevation pattern submitted elsewhere in this application, the relative field of the proposed antenna does not exceed a value of 0.13 at any downward direction greater than 7.0 degrees below the horizontal. Considering this worst-case downward relative field of 0.13, the subject station is predicted to produce a maximum power density of only 18.00 microwatts per square centimeter at two meters above ground level at the multiple-use transmitter site. This represents only 4.46% of the FCC Guideline value of 403.3 microwatts per square centimeter for uncontrolled RFR environments at the WVOZ-TV operating frequency. Pursuant to Section 1.1307(b)(3) of the FCC Rules, because the proposed facility would contribute less than 5% of the uncontrolled and controlled exposure limit at the multiple use site, the proposal's power density contribution is insignificant.

Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel.

In light of the above, the proposed WVOZ-TV facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

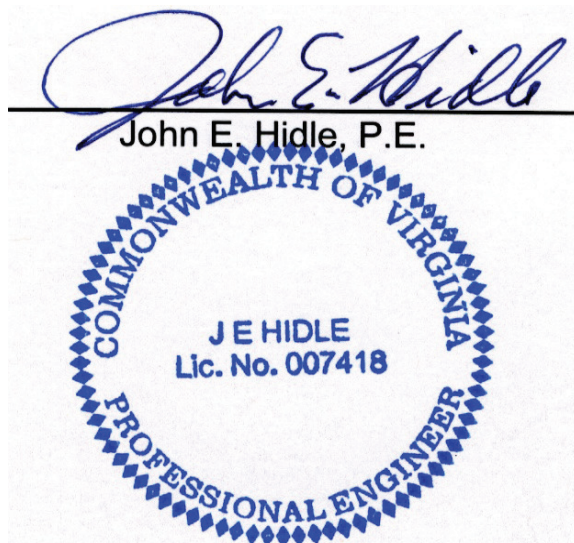
**OCCUPATIONAL SAFETY**

The licensee of WVOZ-TV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WVOZ-TV antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

**SUMMARY**

It is submitted that the instant application for construction permit to change WVOZ-TV from channel 47 to channel 36, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: June 16, 2017





**PREDICTED COVERAGE CONTOURS**

**WVOZ-TV - PONCE, PUERTO RICO**  
**DTV Channel 36 - 25 kW ERP - 250 M HAAT**  
**JUNE, 2017**



Predicted Noise Limited 40.86 dBu  
F(50,90) Coverage Contour

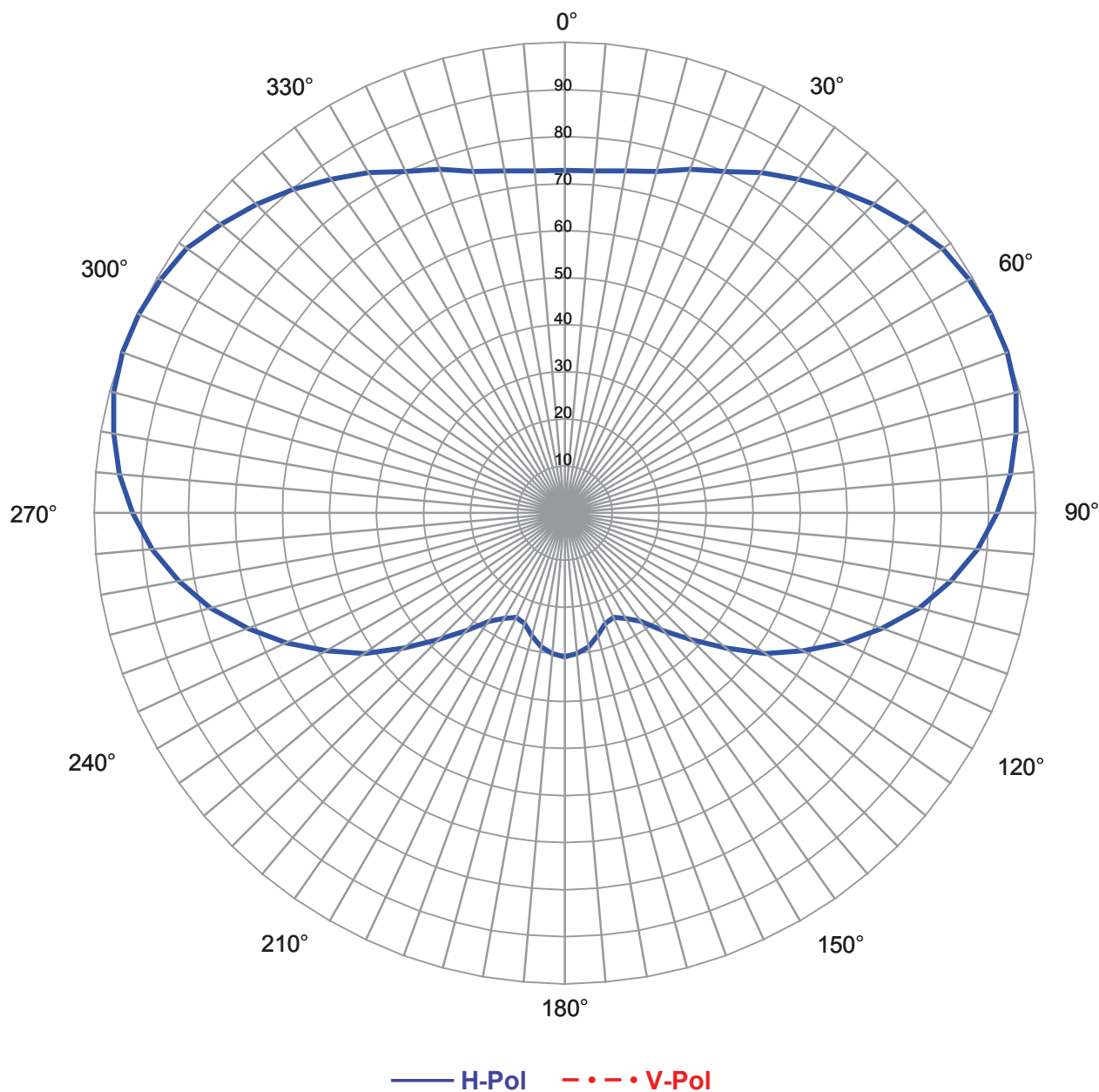


Predicted Principal Community 48 dBu  
F(50,90) Coverage Contour





## Relative Field Azimuth Plane Pattern



Pattern Type:	<b>Relative Field</b>	Type:	<b>16-Bay UHF Slot</b>
Antenna Model:	<b>PSILP16AP-36</b>	Orientation:	<b>0°</b>
Polarization:	<b>Horizontal</b>	Pattern:	<b>AP</b>
Gain:	<b>31.19 (14.94 dB)</b>	Station:	<b>WVOZ-TV</b>
Channel:	<b>36</b>	Date:	<b>6/2/2017</b>





## Relative Field Tabulation

Azimuth Plane Pattern

Antenna: PSILP16AP-36

Gain: 31.19 (14.94 dB)

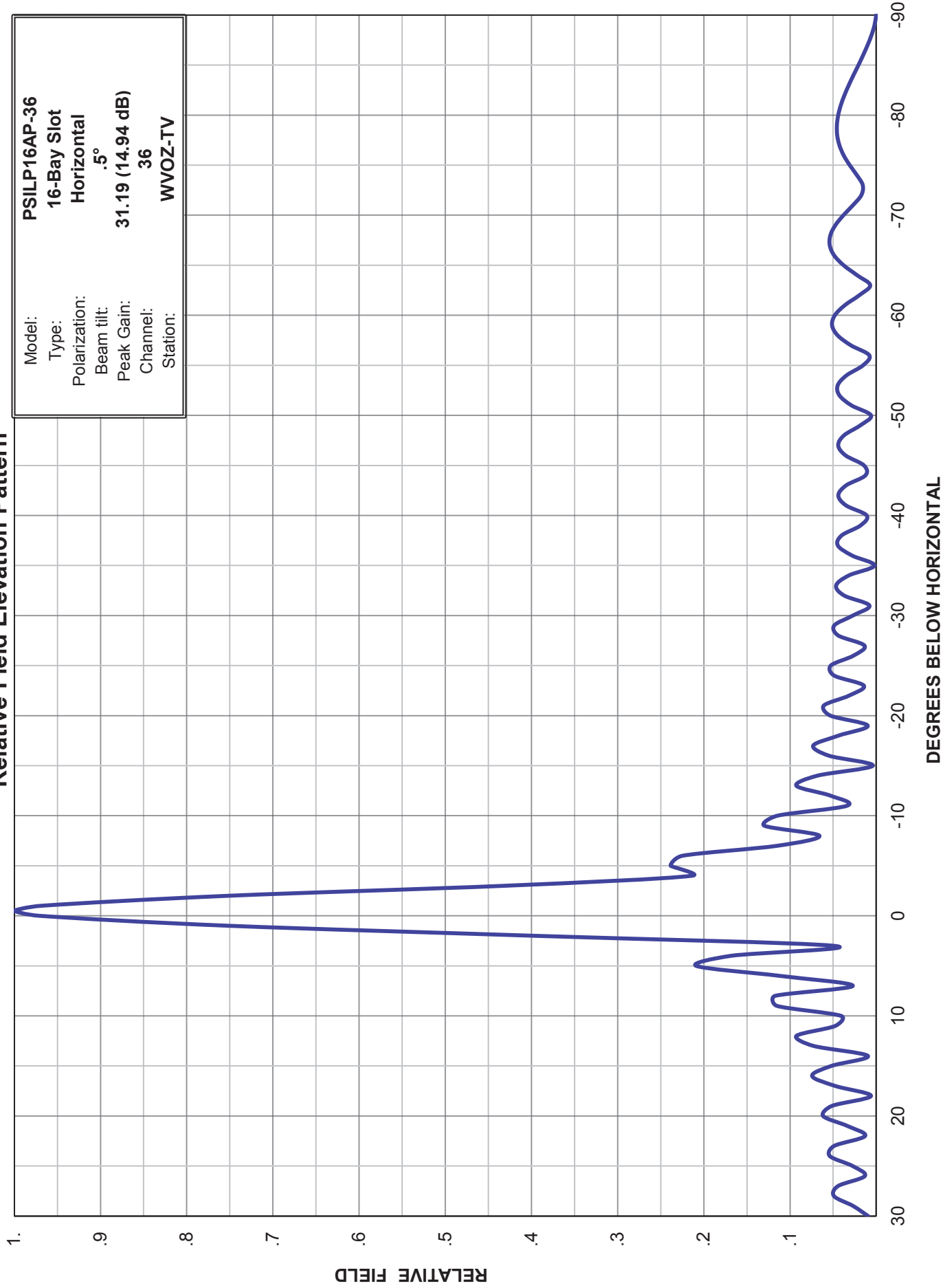
Station: WVOZ-TV

Angle	Relative Field	Power Gain	Gain dB	Angle	Relative Field	Power Gain	Gain dB
0	0.728	16.53	12.18	180	0.305	2.90	4.63
5	0.730	16.62	12.21	185	0.300	2.81	4.48
10	0.738	16.99	12.30	190	0.289	2.61	4.16
15	0.751	17.59	12.45	195	0.270	2.27	3.57
20	0.777	18.83	12.75	200	0.250	1.95	2.90
25	0.800	19.96	13.00	205	0.245	1.87	2.72
30	0.835	21.75	13.37	210	0.259	2.09	3.21
35	0.865	23.34	13.68	215	0.280	2.45	3.88
40	0.898	25.15	14.01	220	0.326	3.31	5.20
45	0.927	26.80	14.28	225	0.380	4.50	6.54
50	0.954	28.39	14.53	230	0.446	6.20	7.93
55	0.980	29.95	14.76	235	0.520	8.43	9.26
60	0.992	30.69	14.87	240	0.584	10.64	10.27
65	0.999	31.13	14.93	245	0.652	13.26	11.23
70	1.000	31.19	14.94	250	0.716	15.99	12.04
75	0.992	30.69	14.87	255	0.780	18.98	12.78
80	0.973	29.53	14.70	260	0.832	21.59	13.34
85	0.950	28.15	14.49	265	0.880	24.15	13.83
90	0.918	26.28	14.20	270	0.918	26.28	14.20
95	0.880	24.15	13.83	275	0.950	28.15	14.49
100	0.832	21.59	13.34	280	0.973	29.53	14.70
105	0.780	18.98	12.78	285	0.992	30.69	14.87
110	0.716	15.99	12.04	290	1.000	31.19	14.94
115	0.652	13.26	11.23	295	0.999	31.13	14.93
120	0.584	10.64	10.27	300	0.992	30.69	14.87
125	0.520	8.43	9.26	305	0.980	29.95	14.76
130	0.446	6.20	7.93	310	0.954	28.39	14.53
135	0.380	4.50	6.54	315	0.927	26.80	14.28
140	0.326	3.31	5.20	320	0.898	25.15	14.01
145	0.280	2.45	3.88	325	0.865	23.34	13.68
150	0.259	2.09	3.21	330	0.835	21.75	13.37
155	0.245	1.87	2.72	335	0.800	19.96	13.00
160	0.250	1.95	2.90	340	0.777	18.83	12.75
165	0.270	2.27	3.57	345	0.751	17.59	12.45
170	0.289	2.61	4.16	350	0.738	16.99	12.30
175	0.300	2.81	4.48	355	0.730	16.62	12.21



Propagation Systems, Inc.

Relative Field Elevation Pattern





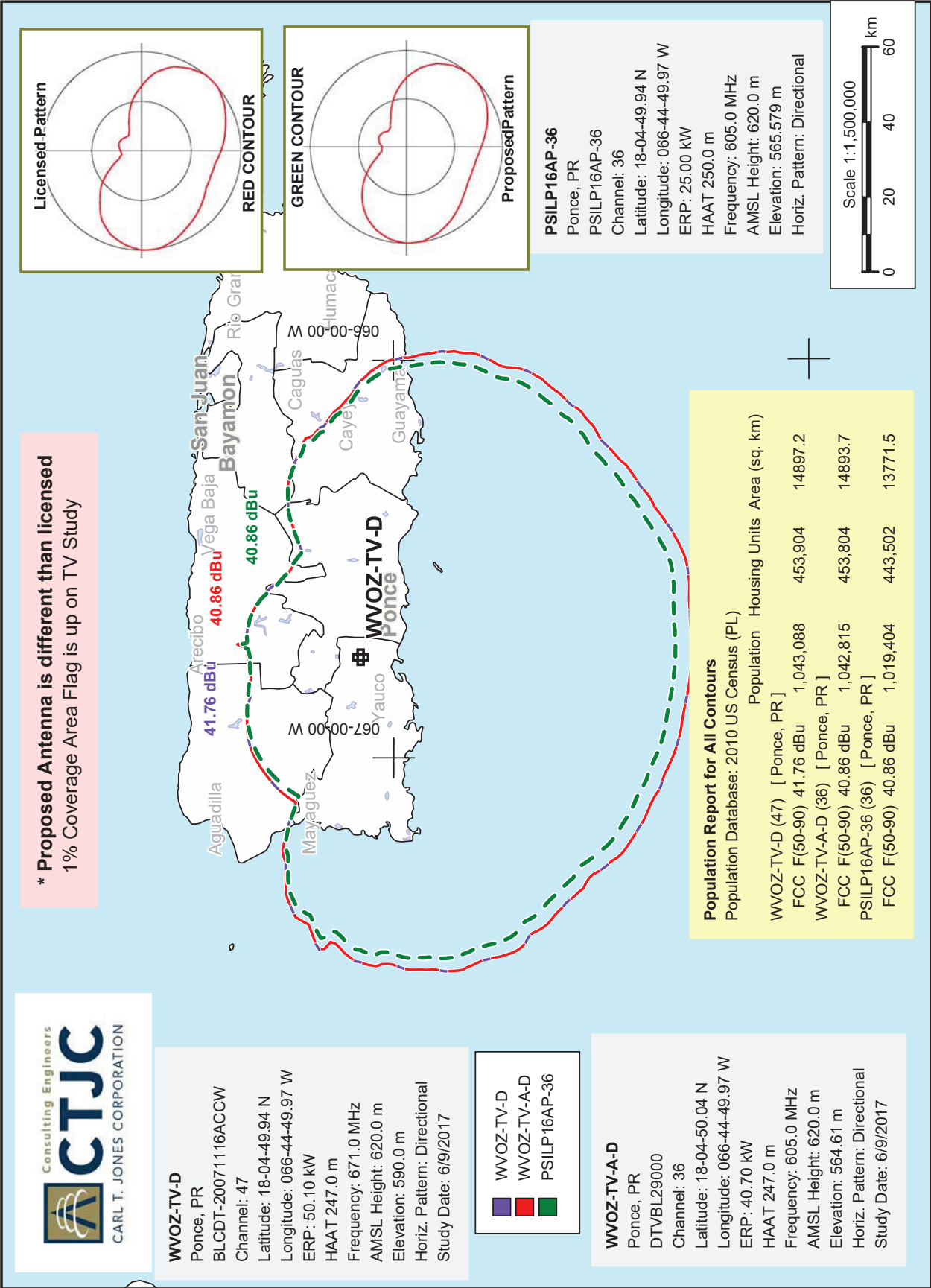
## Relative Field Tabulation

Elevation Plane Pattern  
 Antenna Model: PSILP16AP-36  
 Gain: 31.19 (14.94 dBd)  
 Station: WVOZ-TV

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90	0.001	-60.00	-50	0.006	-44.35	-10	0.115	-18.82
-89	0.002	-54.11	-49	0.018	-34.66	-9	0.130	-17.73
-88	0.005	-45.26	-48	0.037	-28.54	-8	0.066	-23.62
-87	0.010	-40.00	-47	0.044	-27.11	-7	0.114	-18.83
-86	0.015	-36.39	-46	0.036	-28.97	-6	0.225	-12.97
-85	0.021	-33.72	-45	0.014	-36.93	-5	0.238	-12.45
-84	0.026	-31.58	-44	0.013	-38.01	-4	0.214	-13.40
-83	0.032	-29.95	-43	0.035	-29.12	-3	0.431	-7.31
-82	0.037	-28.68	-42	0.044	-27.14	-2	0.752	-2.48
-81	0.041	-27.73	-41	0.035	-29.12	-1	0.969	-0.28
-80	0.044	-27.11	-40	0.011	-39.12	0	1.000	0.00
-79	0.046	-26.82	-39	0.018	-34.81	1	0.971	-0.25
-78	0.045	-26.88	-38	0.040	-27.93	2	0.750	-2.50
-77	0.043	-27.39	-37	0.045	-27.02	3	0.396	-8.05
-76	0.038	-28.43	-36	0.028	-31.00	4	0.049	-26.18
-75	0.031	-30.24	-35	0.002	-54.11	5	0.168	-15.47
-74	0.022	-32.99	-34	0.032	-29.91	6	0.209	-13.60
-73	0.016	-36.13	-33	0.047	-26.65	7	0.112	-18.99
-72	0.017	-35.25	-32	0.037	-28.57	8	0.027	-31.33
-71	0.027	-31.38	-31	0.008	-42.07	9	0.117	-18.62
-70	0.038	-28.40	-30	0.027	-31.33	10	0.115	-18.76
-69	0.047	-26.48	-29	0.049	-26.23	11	0.041	-27.80
-68	0.053	-25.48	-28	0.044	-27.14	12	0.047	-26.48
-67	0.054	-25.36	-27	0.014	-37.31	13	0.093	-20.67
-66	0.049	-26.21	-26	0.026	-31.63	14	0.073	-22.75
-65	0.038	-28.43	-25	0.053	-25.56	15	0.010	-40.27
-64	0.022	-33.10	-24	0.049	-26.23	16	0.052	-25.68
-63	0.007	-43.14	-23	0.014	-36.84	17	0.074	-22.57
-62	0.020	-34.11	-22	0.032	-30.03	18	0.048	-26.42
-61	0.037	-28.75	-21	0.061	-24.31	19	0.006	-44.35
-60	0.048	-26.37	-20	0.053	-25.48	20	0.052	-25.76
-59	0.051	-25.81	-19	0.010	-40.13	21	0.062	-24.20
-58	0.045	-26.97	-18	0.044	-27.17	22	0.033	-29.50
-57	0.029	-30.63	-17	0.073	-22.71	23	0.013	-37.80
-56	0.008	-41.91	-16	0.055	-25.19	24	0.049	-26.21
-55	0.015	-36.30	-15	0.004	-48.09	25	0.054	-25.36
-54	0.034	-29.27	-14	0.068	-23.33	26	0.027	-31.24
-53	0.045	-26.99	-13	0.093	-20.66	27	0.013	-37.60
-52	0.043	-27.39	-12	0.053	-25.51	28	0.044	-27.08
-51	0.029	-30.82	-11	0.034	-29.42	29	0.049	-26.18

WVOZ-TV-D 36 Ponce, PR - PSI PSILP16AP-36 Antenna

Exhibit 6



# SUMMARY OF RADIOFREQUENCY RADIATION STUDY

WVOZ-TV, Ponce, Puerto Rico  
CHANNEL 36, 25 kW ERP, 250 m HAAT  
JUNE, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WVOZ-TV	DT	36	605	H	28	25.000	0.130	0.01800	0.403	4.46%
<b>TOTAL PERCENTAGE OF ANSI VALUE=</b>										<b>4.46%</b>

*\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights  
so that the predicted power densities consider the 2 meter human height allowance.*



## WVOZ-TV - PONCE, PUERTO RICO Longley-Rice Interference Analysis

tvstudy v2.2.2

Database: localhost, Study: WVOZ\_36\_PSI\_250H\_25K\_B, Model: Longley-Rice  
Start: 2017.06.09 09:35:47

Study created: 2017.06.09 09:35:43

Study build station data: LMS TV 2017-06-07 (14)

Proposal: WVOZ-TV D36 DT APP PONCE, PR  
File number: WVOZ\_36\_PSI\_250H\_25K\_B  
Facility ID: 29000  
Station data: User record  
Record ID: 577  
Country: U.S.  
Zone: II

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WCCV-TV	D35	DT	BL	ARECIBO, PR	DTVBL3001	17.2 km
WIMN-CD	D36	DC	LIC	ARECIBO, PR	BLDTA20140225AAJ	43.1
WTJX-TV	D36	DT	BL	CHARLOTTE AMALIE, VI	DTVBL70287	192.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36  
Latitude: 18 4 42.80 N (NAD83)  
Longitude: 66 44 48.60 W  
Height AMSL: 620.0 m  
HAAT: 250.0 m  
Peak ERP: 25.0 kW  
Antenna: PSI Pattern 0.0 deg

40.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.56 kW	-100.8 m	29.6 km
45.0	1.62	-134.1	29.8
90.0	12.8	373.8	72.1
135.0	24.8	510.3	83.8
180.0	15.1	584.3	83.9
225.0	16.2	518.6	81.2
270.0	25.0	396.3	78.0
315.0	10.6	-139.8	37.9

Database HAAT does not agree with computed HAAT

Database HAAT: 250 m Computed HAAT: 251 m

\*\*Proposal service area extends beyond baseline plus 1.0%

**Appendix B - Interference Analysis**  
**WVOZ-TV - Ponce, Puerto Rico**  
**Channel 36 - 25 kW - Page 2**

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 2488.8 km

Distance to Mexican border: 3222.4 km

\*\*Proposal exceeds field strength limit at FCC monitoring station

Conditions at FCC monitoring station: Santa Isabel PR

Bearing: 101.7 degrees Distance: 40.1 km

ERP: 17.9 kW Field strength: 86.3 dBu, 20.6 mV/m

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 311.9 degrees Distance: 4416.0 km

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

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Interference to DTVBL3001 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WCCV-TV	D35	DT	BL	ARECIBO, PR	DTVBL3001	
Undesireds:	WVOZ-TV	D36	DT	BL	PONCE, PR	DTVBL29000	17.2 km
	WVOZ-TV	D36	DT	APP	PONCE, PR	WVOZ_36_PSI_250H_25K_B	17.2
	WIDP	D34	DT	BL	GUAYAMA, PR	DTVBL18410	95.9
	WIMN-CD	D36	DC	LIC	ARECIBO, PR	BLDTA20140225AAJ	27.5
	WTJX-TV	D36	DT	BL	CHARLOTTE AMALIE, VI	DTVBL70287	191.7

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
22611.4 3,417,254	18118.6 2,501,427	17144.6 2,442,965	17160.6 2,442,965	-0.09 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WVOZ-TV D36 DT BL 922.0	46,709	922.0 46,709	
WVOZ-TV D36 DT APP 906.0	46,709		906.0 46,709
WIDP D34 DT BL 16.0	2,032	12.0 1,631	12.0 1,631
WIMN-CD D36 DC LIC 40.0	10,122	36.0 9,721	36.0 9,721

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Interference to BLDTA20140225AAJ LIC, scenario 1

Proposal causes no interference.

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Interference to DTVBL70287 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WTJX-TV	D36	DT	BL	CHARLOTTE AMALIE, VI	DTVBL70287	
Undesireds:	WVOZ-TV	D36	DT	BL	PONCE, PR	DTVBL29000	192.4 km
	WVOZ-TV	D36	DT	APP	PONCE, PR	WVOZ_36_PSI_250H_25K_B	192.4
	WIMN-CD	D36	DC	LIC	ARECIBO, PR	BLDTA20140225AAJ	178.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
20284.7 135,017	20060.4 121,498	20040.3 121,312	20044.3 121,312	-0.02 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
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**Appendix B - Interference Analysis**  
**WVOZ-TV - Ponce, Puerto Rico**  
**Channel 36 - 25 kW - Page 3**

WVOZ-TV D36 DT BL	16.1	186	16.1	186		
WVOZ-TV D36 DT APP	12.0	186			12.0	186
WIMN-CD D36 DC LIC	4.0	0	4.0	0	4.0	0

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Interference to proposal, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WVOZ-TV	D36	DT	APP	PONCE, PR	WVOZ_36_PSI_250H_25K_B	
Undesireds:	WCCV-TV	D35	DT	BL	ARECIBO, PR	DTVBL3001	17.2 km
	WIMN-CD	D36	DC	LIC	ARECIBO, PR	BLDTA20140225AAJ	43.1
	WTJX-TV	D36	DT	BL	CHARLOTTE AMALIE, VI	DTVBL70287	192.4

Service area		Terrain-limited		IX-free		Percent IX	
13992.1	1,140,282	13111.5	884,405	13011.4	883,914	0.76	0.06
Undesired		Total IX		Unique IX		Prcnt Unique IX	
WCCV-TV D35 DT BL	92.1	176	80.1	0	0.61	0.00	
WIMN-CD D36 DC LIC	12.0	176	0.0	0	0.00	0.00	
WTJX-TV D36 DT BL	8.0	315	8.0	315	0.06	0.04	