



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR
POST REPACK CONSTRUCTION PERMIT
WTCN-CA - PALM BEACH, FLORIDA
DTV - CH. 17 - 8.64 kW - 293.3 m HAAT**

Prepared for: WTVX LICENSEE, LLC

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 WTVX LICENSEE, LLC, licensee of WTCN-CA, channel 43, facility ID number 70865, licensed to Palm Beach, Florida, 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 43 with new DTV channel 17 to be used by WTCN-CA for its post-reassignment broadcasting.

OMNI-DIRECTIONAL ANTENNA

The applicant plans to utilize its existing Dielectric model TLP-12A/VP-R BB elliptically polarized broad-band omni-directional transmitting antenna with its center of radiation located at a height above ground of 292 meters, and a height above average terrain of 293.3 meters. 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 Exhibit 2.

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 Protected Service area (51 dBu) contour, which completely encompasses the community of license, Palm Beach, Florida.

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 WTCN-CA's proposed service area is within the baseline plus 1%. (See Appendix B)

International DTV Considerations

The WTCN-CA site is located neither within the Canadian nor the Mexican coordination zone, Therefore no international considerations are necessary.

BLANKETING AND INTERMODULATION INTERFERENCE

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the proposed WTCN-CA 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

STATEMENT OF JOHN E. HIDLE, P.E.
WTCN-CA - Palm Beach, Florida
PAGE 4

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, in $\mu\text{W}/\text{cm}^2$ for an “uncontrolled” environment by dividing the operating frequency in MHz by 1.500, and is similarly determined for a “controlled” environment by dividing the operating frequency in MHz by 0.300.

The predicted emissions of WTCN-CA must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WTCN-CA, which will operate on television Channel 17 (488-494 MHz), the MPE is 327.33 microwatts per centimeter squared ($\mu\text{W}/\text{cm}^2$) in an “uncontrolled” environment and 1,636.7 $\mu\text{W}/\text{cm}^2$ in a “controlled” environment. The proposed WTCN-CA facility will operate with a maximum

STATEMENT OF JOHN E. HIDLE, P.E.
WTCN-CA - Palm Beach, Florida
PAGE 5

ERP of 8.64 kW from an elliptically polarized omni-directional transmitting antenna with a centerline height of 292 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WTCN-CA facility is predicted to produce a power density at two meters above ground level of $0.618 \mu\text{W}/\text{cm}^2$, which is 0.19% of the FCC guideline value for an "uncontrolled" environment, and 0.038% of the FCC's guideline value for "controlled" environments. There is one full-power DTV broadcast facility, four other LPTV DTV facilities, three full-power FM stations and an FM translator that are located at the WTCN-CA site. Therefore, the total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations within the relevant proximity, is 74.08% of the limit applicable to "uncontrolled" environments, and 14.816% of the limit for "controlled" environments. (See Appendix A)

OCCUPATIONAL SAFETY

The licensee of WTCN-CA is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WTCN-CA 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.

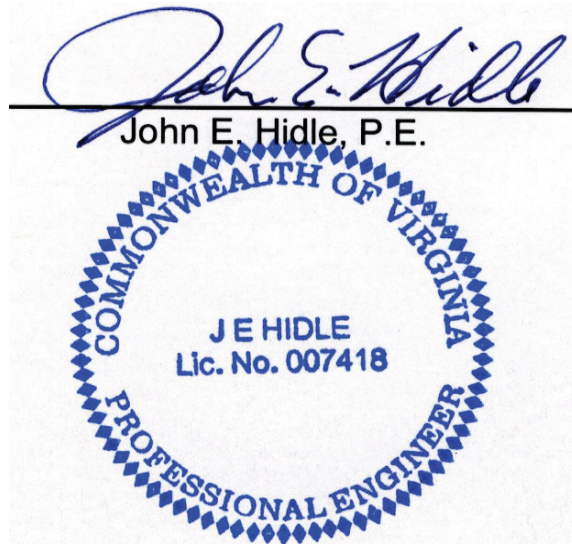
SUMMARY

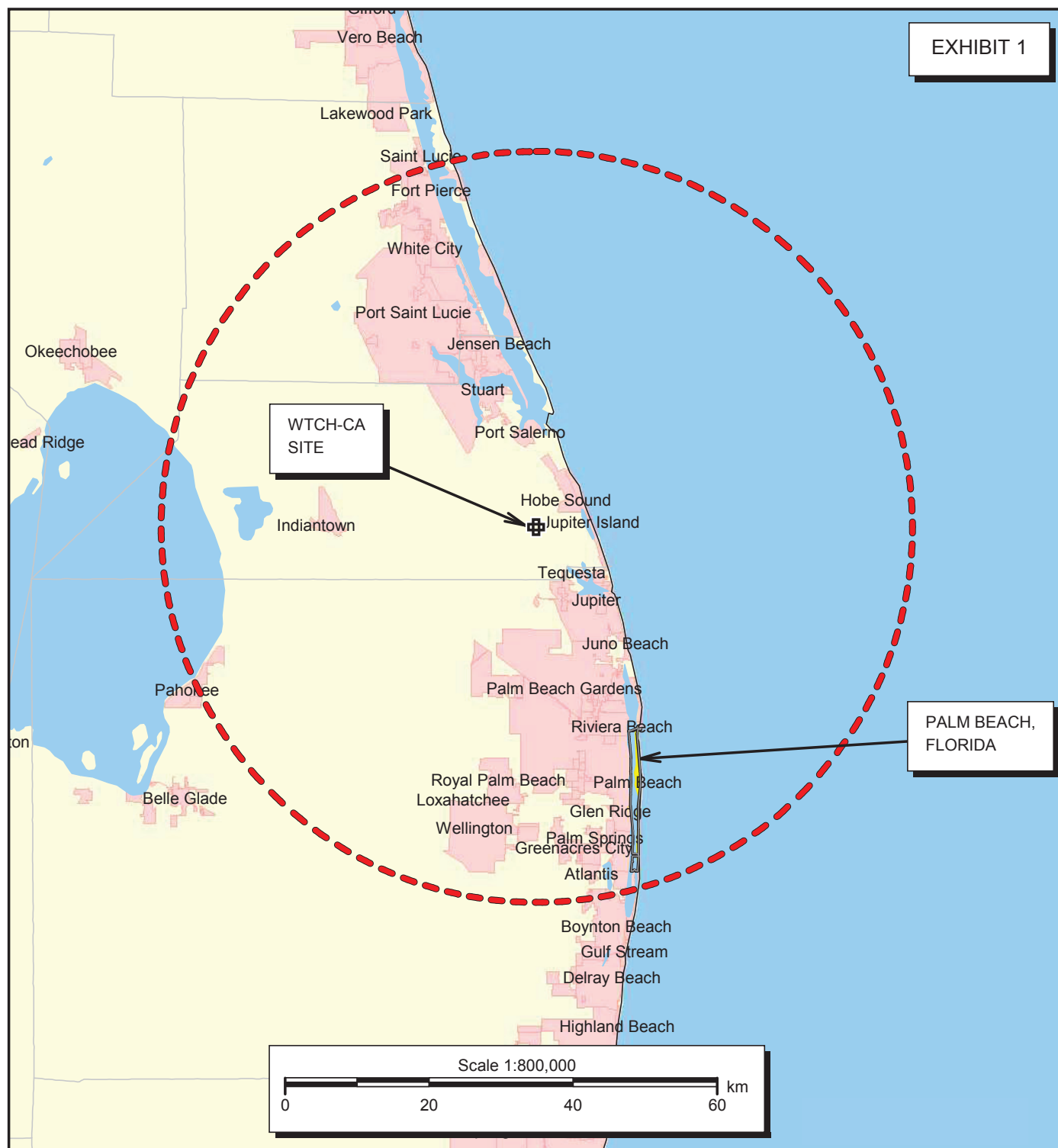
It is submitted that the instant application for construction permit to change WTCN-CA from channel 43 to channel 17, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared

STATEMENT OF JOHN E. HIDLE, P.E.
WTCN-CA - Palm Beach, Florida
PAGE 6

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 27, 2017





PREDICTED COVERAGE CONTOURS

WTCN-CA - PALM BEACH, FLORIDA
 DTV Channel 17 - 8.64 kW ERP - 293 M HAAT
 JUNE, 2017

Protected 51 dBu
 F(50,90) Coverage Contour



Proposal Number

Exhibit 2

Date

8-Nov-11

Call Letters

WTCN-CA

Channel

43

Location

Palm Beach, Florida

Customer

WTVX Licensee, LLC

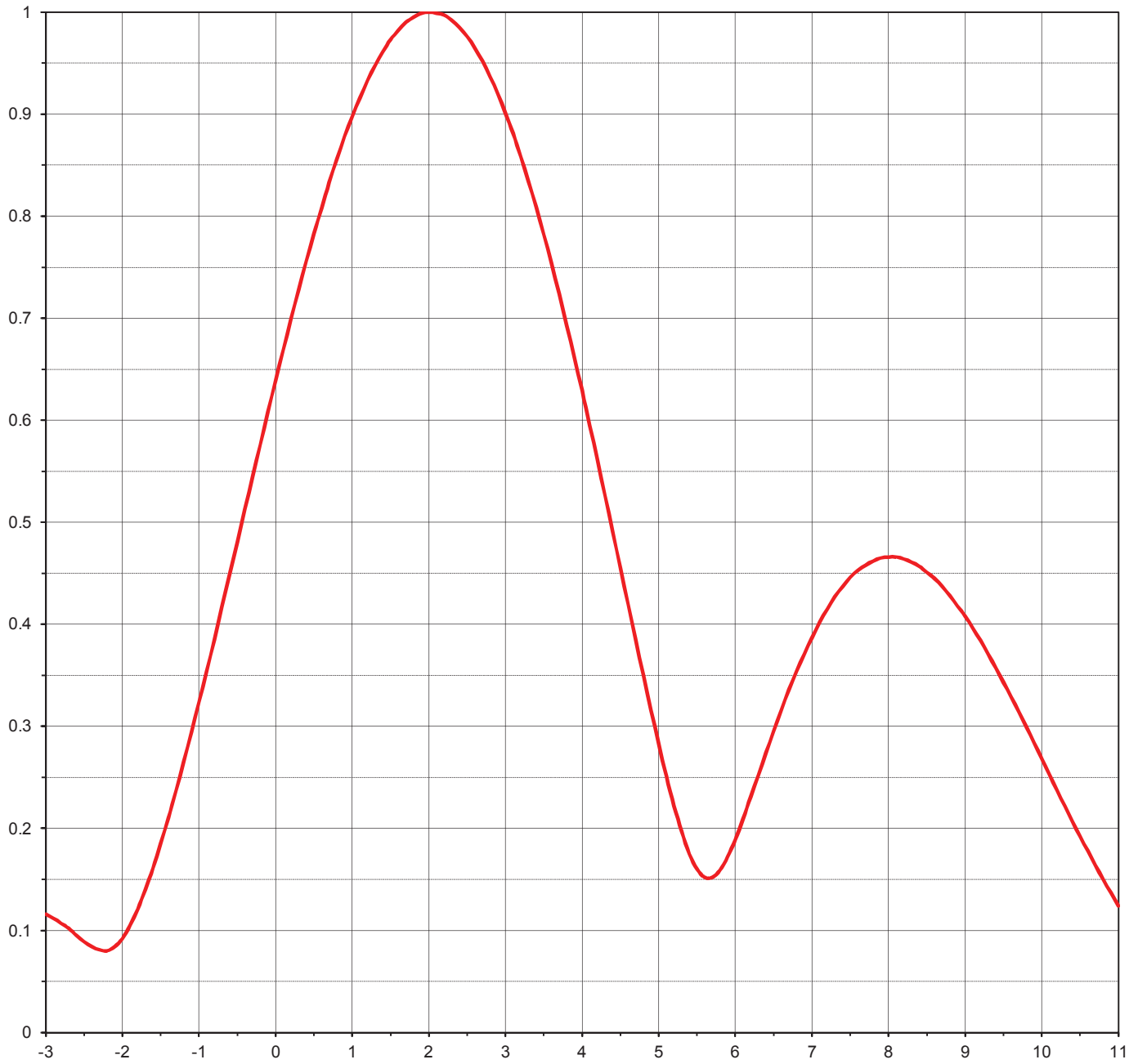
Antenna Type

TLP-12AVP-R BB

ELEVATION PATTERN

RMS Gain at Main Lobe **10.50 (10.21 dB)**
RMS Gain at Horizontal **4.30 (6.33 dB)**
Calculated / Measured **Calculated**

Beam Tilt **2.00 deg**
Frequency **647.00 MHz**
Drawing # **12L105200**



Degrees Below Horizontal



Proposal Number

Exhibit 3

Date

8-Nov-11

Call Letters

WTCN-CA

Channel

43

Location

Palm Beach, Florida

Customer

WTVX Licensee, LLC

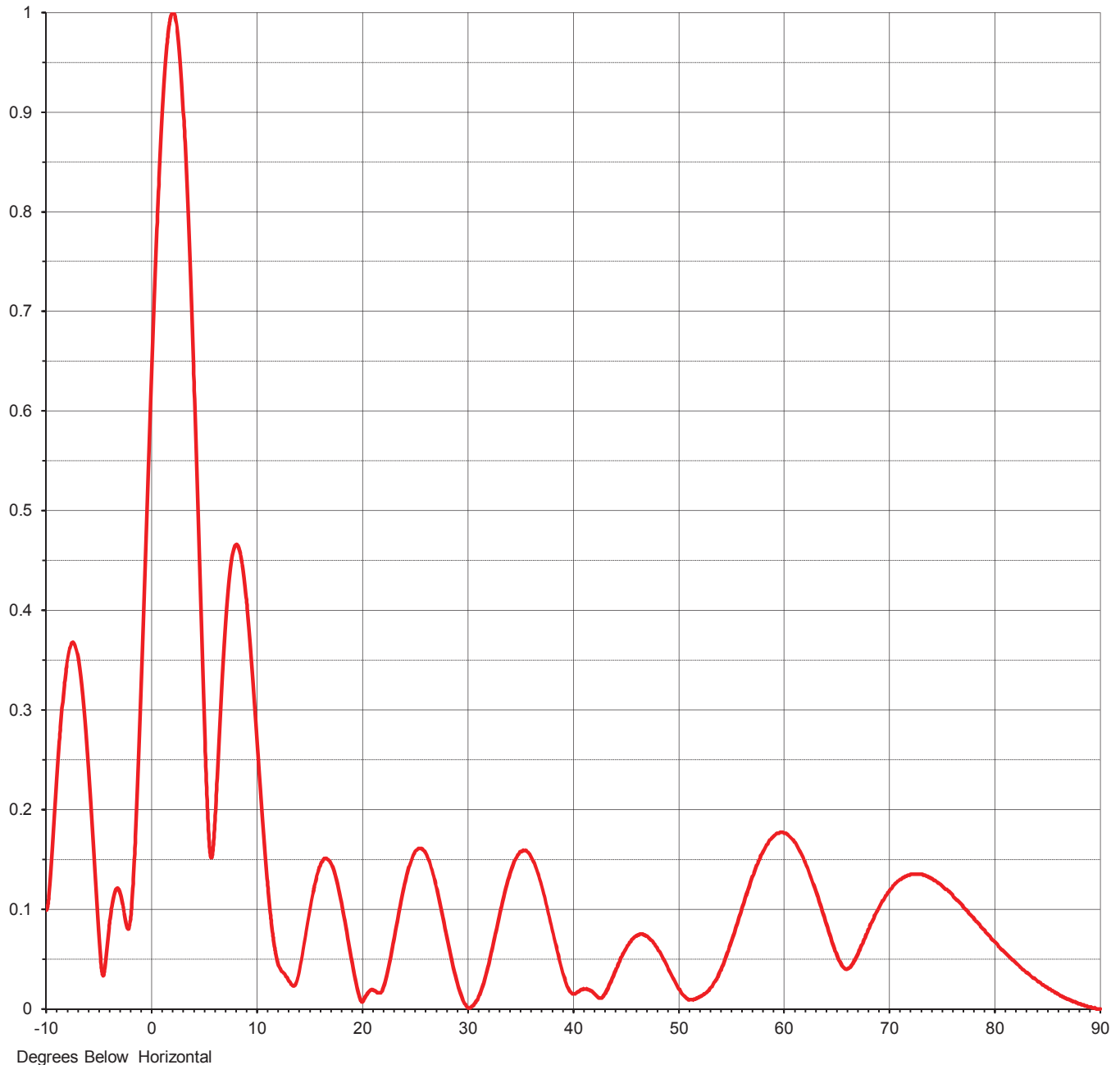
Antenna Type

TLP-12AVP-R BB

ELEVATION PATTERN

RMS Gain at Main Lobe **10.50 (10.21 dB)**
RMS Gain at Horizontal **4.30 (6.33 dB)**
Calculated / Measured **Calculated**

Beam Tilt **2.00 deg**
Frequency **647.00 MHz**
Drawing # **12L105200-90**



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Proposal Number

Exhibit 4

Date

8-Nov-11

Call Letters

WTCN-CA

Channel

43

Location

Palm Beach, Florida

Customer

WTVX Licensee, LLC

Antenna Type

TLP-12A/VP-R BB**TABULATION OF ELEVATION PATTERN**Elevation Pattern Drawing #: **12L105200-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.099	2.4	0.985	10.6	0.192	30.5	0.003	51.0	0.009	71.5	0.133
-9.5	0.147	2.6	0.965	10.8	0.164	31.0	0.009	51.5	0.009	72.0	0.135
-9.0	0.230	2.8	0.937	11.0	0.137	31.5	0.023	52.0	0.012	72.5	0.135
-8.5	0.302	3.0	0.901	11.5	0.082	32.0	0.042	52.5	0.015	73.0	0.135
-8.0	0.350	3.2	0.858	12.0	0.049	32.5	0.065	53.0	0.019	73.5	0.133
-7.5	0.368	3.4	0.809	12.5	0.037	33.0	0.089	53.5	0.027	74.0	0.131
-7.0	0.353	3.6	0.754	13.0	0.030	33.5	0.112	54.0	0.037	74.5	0.127
-6.5	0.308	3.8	0.693	13.5	0.023	34.0	0.132	54.5	0.050	75.0	0.123
-6.0	0.239	4.0	0.629	14.0	0.033	34.5	0.148	55.0	0.065	75.5	0.119
-5.5	0.156	4.2	0.561	14.5	0.062	35.0	0.157	55.5	0.081	76.0	0.114
-5.0	0.071	4.4	0.491	15.0	0.093	35.5	0.159	56.0	0.097	76.5	0.108
-4.5	0.037	4.6	0.420	15.5	0.122	36.0	0.154	56.5	0.114	77.0	0.102
-4.0	0.086	4.8	0.350	16.0	0.142	36.5	0.143	57.0	0.130	77.5	0.096
-3.5	0.117	5.0	0.283	16.5	0.151	37.0	0.127	57.5	0.144	78.0	0.091
-3.0	0.116	5.2	0.222	17.0	0.148	37.5	0.106	58.0	0.156	78.5	0.085
-2.8	0.107	5.4	0.175	17.5	0.134	38.0	0.084	58.5	0.165	79.0	0.079
-2.6	0.095	5.6	0.152	18.0	0.111	38.5	0.061	59.0	0.172	79.5	0.073
-2.4	0.084	5.8	0.159	18.5	0.083	39.0	0.040	59.5	0.176	80.0	0.067
-2.2	0.080	6.0	0.189	19.0	0.052	39.5	0.023	60.0	0.177	80.5	0.061
-2.0	0.092	6.2	0.231	19.5	0.025	40.0	0.015	60.5	0.174	81.0	0.056
-1.8	0.121	6.4	0.274	20.0	0.007	40.5	0.017	61.0	0.169	81.5	0.051
-1.6	0.161	6.6	0.316	20.5	0.014	41.0	0.020	61.5	0.160	82.0	0.046
-1.4	0.210	6.8	0.354	21.0	0.019	41.5	0.019	62.0	0.149	82.5	0.041
-1.2	0.265	7.0	0.387	21.5	0.016	42.0	0.016	62.5	0.136	83.0	0.036
-1.0	0.324	7.2	0.415	22.0	0.019	42.5	0.011	63.0	0.121	83.5	0.032
-0.8	0.385	7.4	0.437	22.5	0.038	43.0	0.014	63.5	0.105	84.0	0.028
-0.6	0.449	7.6	0.453	23.0	0.065	43.5	0.024	64.0	0.088	84.5	0.024
-0.4	0.513	7.8	0.462	23.5	0.093	44.0	0.036	64.5	0.068	85.0	0.021
-0.2	0.576	8.0	0.466	24.0	0.120	44.5	0.048	65.0	0.054	85.5	0.018
0.0	0.639	8.2	0.464	24.5	0.142	45.0	0.059	65.5	0.043	86.0	0.015
0.2	0.699	8.4	0.457	25.0	0.156	45.5	0.067	66.0	0.040	86.5	0.012
0.4	0.756	8.6	0.445	25.5	0.161	46.0	0.073	66.5	0.045	87.0	0.009
0.6	0.808	8.8	0.428	26.0	0.158	46.5	0.075	67.0	0.055	87.5	0.007
0.8	0.856	9.0	0.408	26.5	0.146	47.0	0.073	67.5	0.067	88.0	0.005
1.0	0.898	9.2	0.384	27.0	0.126	47.5	0.069	68.0	0.080	88.5	0.003
1.2	0.933	9.4	0.357	27.5	0.102	48.0	0.062	68.5	0.091	89.0	0.002
1.4	0.961	9.6	0.329	28.0	0.076	48.5	0.053	69.0	0.102	89.5	0.001
1.6	0.982	9.8	0.314	28.5	0.051	49.0	0.043	69.5	0.111	90.0	0.000
1.8	0.995	10.0	0.284	29.0	0.029	49.5	0.032	70.0	0.119		
2.0	1.000	10.2	0.253	29.5	0.012	50.0	0.022	70.5	0.125		
2.2	0.997	10.4	0.222	30.0	0.002	50.5	0.014	71.0	0.130		

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**SUMMARY OF RADIOFREQUENCY
RADIATION STUDY**
WTCN-CA, Palm Beach, FL
Channel 17, 8.64 kW, 293.5 m HAAT
May, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>WORST-CASE PREDICTED POWER DENSITY ($\mu\text{W}/\text{cm}^2$)</u>	<u>FCC UNCONTROLLED LIMIT ($\mu\text{W}/\text{cm}^2$)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WTCN-CA	DT	17	491	H & V	292	8.640	0.300	0.618	327.33	0.19%
WVHB-CA	DT	33	587	H & V	292	1.580	0.300	0.113	391.33	0.03%
WTCE	DT	18	497	H	295	649.000	0.300	22.731	331.33	6.86%
WDOX-LD(CP)	DT	24	533	H	260	4.550	0.300	0.206	355.33	0.06%
WXOD-LD	DT	33	587	H	260	4.450	0.300	0.201	391.33	0.05%
WMMF-LD	DT	39	623	H	290	15.000	0.300	0.544	415.33	0.13%
WKGR	FM	254	98.7	H & V	295	100.000	<note 1>	43.921	200.00	21.96%
WMBX	FM	272	102.3	H & V	294	100.000	<note 1>	44.219	200.00	22.11%
WIRK	FM	276	103.1	H & V	296	90.000	<note 1>	43.619	200.00	21.81%
WLDI (AUX)	FM	238	95.5	H & V	262	15.000	<note2>	1.286	200.00	0.64%
W295BJ	FM	295	106.9	H & V	164	0.190	1.000	0.484	200.00	0.24%
TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =										74.08%

* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

note 1: FM Model Antenna: EPA Type 1; 8-bay, full-wave spaced antenna

note 2: FM Model Antenna: EPA Type 3; ERI Rototiller Type, 4-bay, full-wave spaced antenna



WTCN-CA - PALM BEACH, FLORIDA Longley-Rice Interference Analysis

tvstudy v2.2.2

Database: localhost, Study: WTCN_CA_17_293H_8_64KW, Model: Longley-Rice
Start: 2017.06.02 14:30:14

Study created: 2017.06.02 14:30:09

Study build station data: LMS TV 2017-06-01 (11)

Proposal: WTCN-CA D17 DC LIC PALM BEACH, FL
File number: WTCN_CA_17_293H_8_64KW
Facility ID: 70865
Station data: User record
Record ID: 515
Country: U.S.

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WRCF-CD	D16	DC	APP	ORLANDO, FL	BLANK0000024682	195.0 km
WPBF	D16	DT	LIC	TEQUESTA, FL	BLANK0000001052	23.9
WPMF-CD	D17	DC	BL	MIAMI, FL	DTVBL30129	117.5
WFTS-TV	D17	DT	BL	TAMPA, FL	DTVBL64588	224.7
WTCE-TV	D18	DT	BL	FORT PIERCE, FL	DTVBL29715	0.0
WMOR-TV	D18	DT	BL	LAKELAND, FL	DTVBL53819	223.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17
Mask: Full Service
Latitude: 27 1 32.00 N (NAD83)
Longitude: 80 10 41.90 W
Height AMSL: 296.9 m
HAAT: 293.3 m
Peak ERP: 8.64 kW
Antenna: Omnidirectional

49.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	8.64 kW	292.8 m	54.5 km
45.0	8.64	295.5	54.6
90.0	8.64	295.5	54.6
135.0	8.64	295.0	54.6
180.0	8.64	292.6	54.5
225.0	8.64	291.1	54.4
270.0	8.64	291.2	54.4
315.0	8.64	293.7	54.5

Proposal service area is within baseline plus 1.0%

Appendix B - Interference Analysis
WTCN-CA - Palm Beach, Florida
Channel 17 - 8.64 kW - Page 2

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1641.0 km

Distance to Mexican border: 1668.6 km

Conditions at FCC monitoring station: Vero Beach FL

Bearing: 325.2 degrees Distance: 78.7 km

ERP: 8.64 kW Field strength: 52.9 dBu, 0.4 mV/m

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 308.7 degrees Distance: 2723.4 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

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%

Interference to BLANK0000024682 APP, scenario 1

Proposal causes no interference.

Interference to BLANK0000001052 LIC, scenario 1

Proposal causes no interference.

Interference to BLANK0000001052 LIC, scenario 2

Proposal causes no interference.

Interference to DTVBL30129 BL, scenario 1

Proposal causes no interference.

Interference to DTVBL64588 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFTS-TV	D17	DT	BL	TAMPA, FL	DTVBL64588	
Undesireds:	WTCN-CA	D17	DC	BL	PALM BEACH, FL	DTVBL70865	224.7 km
	WTCN-CA	D17	DC	LIC	PALM BEACH, FL	WTCN_CA_17_293H_8_64KW	224.7
	WCJB-TV	D16	DT	LIC	GAINESVILLE, FL	BLCDDT20071119AJB	188.8
	WRCF-CD	D16	DC	APP	ORLANDO, FL	BLANK0000024682	142.1
	WPBF	D16	DT	LIC	TEQUESTA, FL	BLANK0000001052	200.8
	WFXU	D17	DT	BL	LIVE OAK, FL	DTVBL22245	309.6
	WPMF-CD	D17	DC	BL	MIAMI, FL	DTVBL30129	290.3
	WMOR-TV	D18	DT	BL	LAKELAND, FL	DTVBL53819	2.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
38252.8 5,077,970	38236.8 5,077,719	38200.9 5,070,985	38200.9 5,070,985	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WTCN-CA D17 DC BL	7.9	332	7.9 332

Appendix B - Interference Analysis
WTCN-CA - Palm Beach, Florida
Channel 17 - 8.64 kW - Page 3

WTCN-CA D17 DC LIC	7.9	332			7.9	332
WMOR-TV D18 DT BL	28.0	6,402	28.0	6,402	28.0	6,402

Interference to DTVBL64588 BL, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFTS-TV	D17	DT	BL	TAMPA, FL	DTVBL64588	
Undesireds:	WTCN-CA	D17	DC	BL	PALM BEACH, FL	DTVBL70865	224.7 km
	WTCN-CA	D17	DC	LIC	PALM BEACH, FL	WTCN_CA_17_293H_8_64KW	224.7
	WCJB-TV	D16	DT	LIC	GAINESVILLE, FL	BLCDT20071119AJB	188.8
	WRCF-CD	D16	DC	BL	ORLANDO, FL	DTVBL10549	129.3
	WPBF	D16	DT	LIC	TEQUESTA, FL	BLANK0000001052	200.8
	WFXU	D17	DT	BL	LIVE OAK, FL	DTVBL22245	309.6
	WPMF-CD	D17	DC	BL	MIAMI, FL	DTVBL30129	290.3
	WMOR-TV	D18	DT	BL	LAKELAND, FL	DTVBL53819	2.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
38252.8 5,077,970	38236.8 5,077,719	38200.9 5,070,985	38200.9 5,070,985	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WTCN-CA D17 DC BL 7.9 332	7.9 332	7.9 332	
WTCN-CA D17 DC LIC 7.9 332	7.9 332	7.9 332	
WMOR-TV D18 DT BL 28.0 6,402	28.0 6,402	28.0 6,402	

Interference to DTVBL29715 BL, scenario 1
Proposal causes no interference.

Interference to DTVBL53819 BL, scenario 1
Proposal causes no interference.

Interference to proposal, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WTCN-CA	D17	DC	LIC	PALM BEACH, FL	WTCN_CA_17_293H_8_64KW	
Undesireds:	WPBF	D16	DT	LIC	TEQUESTA, FL	BLANK0000001052	23.9 km
	WPMF-CD	D17	DC	BL	MIAMI, FL	DTVBL30129	117.5
	WFTS-TV	D17	DT	BL	TAMPA, FL	DTVBL64588	224.7
	WTCE-TV	D18	DT	BL	FORT PIERCE, FL	DTVBL29715	0.0

Service area	Terrain-limited	IX-free	Percent IX
9343.7 1,279,421	9343.7 1,279,421	9268.5 1,276,103	0.81 0.26

Undesired	Total IX	Unique IX	Prcnt Unique IX
WPBF D16 DT LIC 75.3 3,318	75.3 3,318	75.3 3,318	0.81 0.26