

TECHNICAL EXHIBIT
MINOR CHANGE OF LICENSE APPLICATION
AM STATION WVJP
CAGUAS, PUERTO RICO, FACILITY ID 6442
1110 KHZ 2.5 KW DAY 0.5 KW NIGHT ND UNLIMITED

Engineering Statement

The technical exhibit of which this narrative is part, has been prepared on behalf of Borinquen Broadcasting Corporation, licensee of AM station WVJP, Facility ID 6442, 1110 KHz, Caguas, Puerto Rico, in support of a minor license change request.

WVJP (AM) lost its tower during Hurricane Maria. After operating for a while with an Engineering STA, File Number BSTA-20171130ABT, with an inverted “L” antenna, the station has been authorized, and is now operating with, an Engineering STA, File Number BSTA-20190625AAO, using a shorter tower, 214 ft. of overall height (the licensed structure is 225 ft. overall) and three top loading guy wires 5 meter long, at the license site coordinates. This facility serves well the City of License of WVJP, Caguas, closely mirroring the license facility and affording the financial advantages of using a readily available tower, acquired at reduced cost. The FAA will be notified of the lower height of the antenna structure and once their approval is obtained, the ASR will be modified with the FCC to reflect the new tower height. It is now proposed to modify the WVJP license (a minor change in license) to permanently licensed the current Engineering STA of the WVJP facility.

As no change of site, antenna mode, or operating power is proposed, and the radiation level will be slightly reduced from the licensed Theo RMS of 305.78 mV/m @ 1km @ 1kW to 305.70 mV/m @ 1km @ 1kW, no allocation study seems required. The station proposes to use a shorter radiator at its licensed site, 62.4 meters (205 ft.), 83.2 electrical degrees tower and 5 meters, or 6.7 electrical degrees, of top loading using three guy wires. It is proposed to use its licensed power of 2.5 kW daytime, 0.5 kW nighttime and the existing, licensed, standard 120 radials, 90° (67.5 meters long) ground system. The proposed radiating element will be series fed and mounted on an insulator.

Proposed Transmitter Location

The facility is located at the existing WVJP site, whose NAD 27 coordinates are:

18° 13' 24.0" North Latitude

66° 01' 12.8" West Longitude

As it is proposed to use the existing station site and ground system, no antenna site plat or transmitter site map is shown.

Figure 1 is a sketch of the proposed tower. Figure 2 shows the proposed electrical parameters. Figure 3 shows the licensed and proposed daytime contours using R2 conductivities; as shown in Figure 3, the licensed daytime coverage will not be exceeded and the COL will be adequately served. Figure 4 shows the NIF calculation and the Nighttime Allocation Protection Report. As shown in Figure 4, the proposed STA facility will not cause any impermissible nighttime interference to any domestic or foreign station. Figure 5 shows the licensed and proposed nighttime contours; as shown in Figure 5, the licensed nighttime coverage will not be exceeded and the COL will be properly served. As shown in Figure 3 and 5, the daytime and nighttime service contours of WVJP will be essentially unchanged.

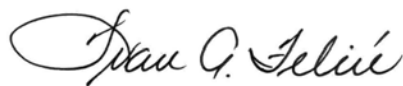
Environmental Considerations

The proposed tower is a replacement of the WVJP antenna damaged by Hurricane Maria, located at exactly the license location. As no increase in power or radiation level is proposed, there will be no increase of RF radiation around the tower.

Quiet Zones and FCC Monitoring Stations

As no change in site, antenna mode or power increase is proposed and, as noted above, the radiation level is been slightly decreased, the Arecibo Observatory, nor the FCC Station at Santa Isabel will be affected in any way, thus neither facility is being notified.

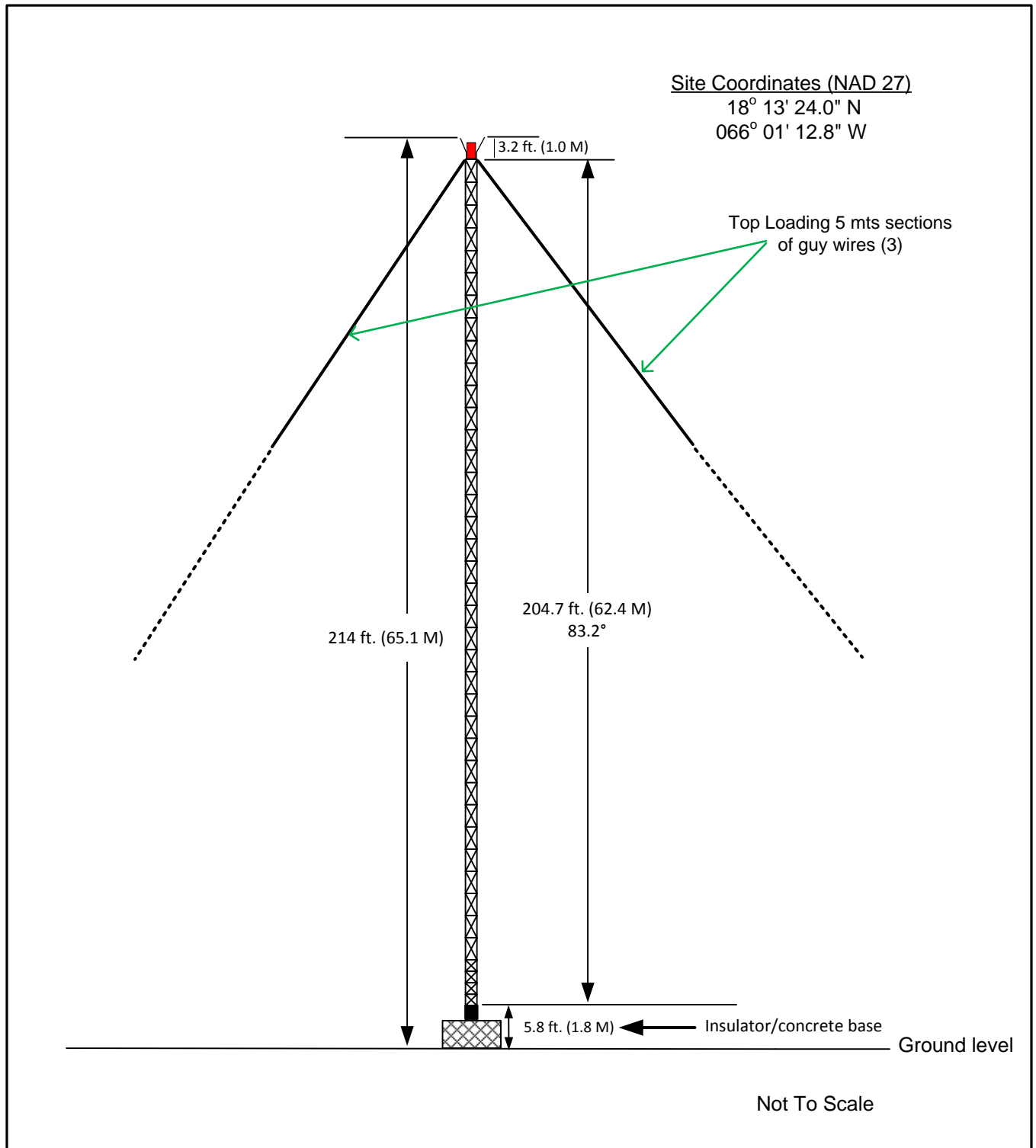
For the reasons stated above, it is believed that grant of the proposed Construction Permit for WVJP (AM) will serve the public interest.



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Figure 1



SKETCH OF PROPOSED ANTENNA STRUCTURE

**RADIO STATION WVJP
CAGUAS, PUERTO RICO
1110 KHZ 2.5 KW-D 0.5 KW-N ND UNLIMITED**

Ivan A. Feliu – Technical Consultant

Figure 2

Proposed and Licensed Operating Parameters

Proposed Facility:

Call: WVJP-Prop

Freq: 1110 kHz

CAGUAS, PR, US

Hours: U

Lat: 18-13-24.0 N

Lng: 066-01-12.8 W

Power: 2.5 kW Day, 0.5 kW Night

Theo RMS: 305.70 mV/m @ 1km @ 1kW

| | Field | Phase | Spacing | Orient | Height | Ref | TL | A | B | C | D |
|----|-------|-------|---------|--------|--------|-------|-------|-------|-------|-------|-------|
| # | Ratio | (deg) | (deg) | (deg) | (deg) | Swch | Swch | (deg) | (deg) | (deg) | (deg) |
| -- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1 | 1.000 | 0.0 | 0.0 | 0.0 | 83.2 | 0 | 1 | 83.2 | 6.7 | 0.0 | 0.0 |

Licensed Facility:

Call: WVJP

Freq: 1110 kHz

CAGUAS, PR, US

Hours: U

Lat: 18-13-24.0 N

Lng: 066-01-12.8 W

Power: 2.5 kW Day, 0.5 kW Night

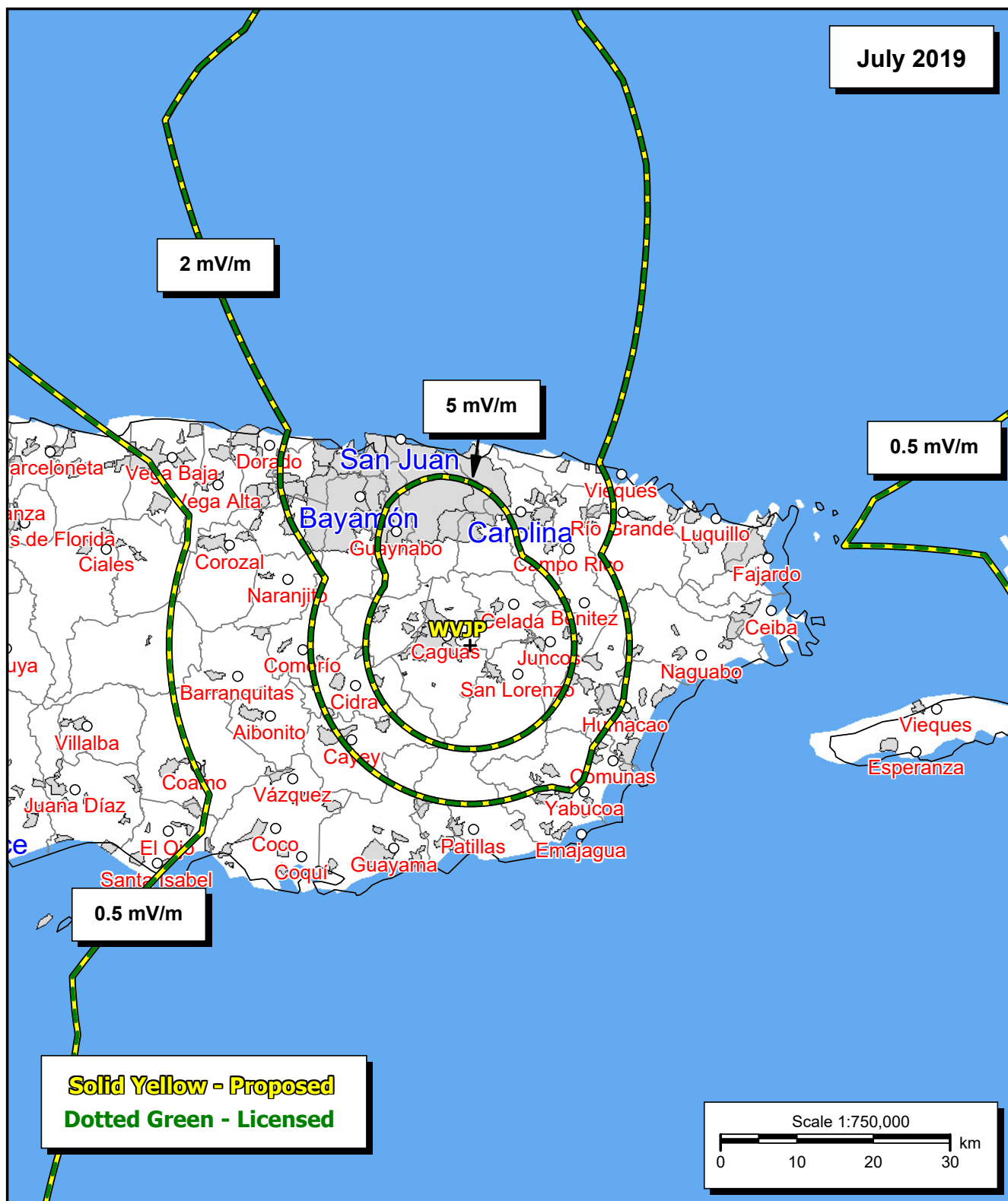
Theo RMS: 305.78 mV/m @ 1km @ 1kW

| | Field | Phase | Spacing | Orient | Height | Ref | TL | A | B | C | D |
|----|-------|-------|---------|--------|--------|-------|-------|-------|-------|-------|-------|
| # | Ratio | (deg) | (deg) | (deg) | (deg) | Swch | Swch | (deg) | (deg) | (deg) | (deg) |
| -- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1 | 1.000 | 0.0 | 0.0 | 0.0 | 89.4 | 0 | 0 | 0.0 | 0.0 | 0.0 | 0.0 |

Antenna Ground System - Licensed and Proposed

It is proposed to use the existing, licensed ground system consisting of 120 buried copper radials, 90 electrical degrees (67.5 meters) long. The radiating element is series fed, mounted on an insulator.

Figure 3



PROPOSED DAYTIME CONTOUR
WVJP 1110 KHZ 2.5 KW ND
CAGUAS, PUERTO RICO

Figure 4

NIF Calculation & Proposed Nighttime Allocation Report

NIF Calculation:

Call: WVJP-P
 Freq: 1110 kHz
 CAGUAS, PR, US
 Hours: N
 Lat: 18-13-24.03 N
 Lng: 066-01-12.80 W
 Power: 0.5 kW
 Theo RMS: 305.70 mV/m @ 1km @ 1kW
 Standard: FCC Rules (1992 Skywave Propagation Model) [10%]
 Contributors:

| Call | Freq (kHz) | City | St | Ct | Limit (mV/m) | RSS Limit (%) | Limit (mV/m) |
|--------------|---------------|--------------|----|----|-----------------|---------------------|-----------------|
| HJZE.O-A1110 | | SINCELEJO 4 | | CO | 9.081 | 100.0 | 9.081 |
| WBT.L 1110 | | CHARLOTTE | NC | US | 6.295 | 69.3 | 11.050 |
| HJGP.O-A1110 | | VDEL RIO ARA | | CO | 5.715 | 51.7 | 12.440 |
| HJDI.O-A1110 | | MEDELLIN 3 | | CO | 5.525 | 44.4 | 13.612 |
| HJJP.O-A1110 | | VILLAVICENCI | | CO | 5.455 | 40.0 | 14.664 |
| HJNC.O-A1110 | | IBAGUE 2 | | CO | 5.190 | 35.3 | 15.556 |
| HJEW.O-A1110 | | CALI 3 | | CO | 4.561 | 29.3 | 16.210 |
| HIJJ.O-C1110 | | JARABACOA | | DR | 4.187 | 25.8 | 16.742 |
| ZDK.O-A 1100 | | GRENVILLE RA | | AC | 4.057 | 24.2 | 17.227 |
| .P-A 1110 | | MANAUS | | BR | 2.316 | 13.4 | 17.382 |

Night Allocation Protection Report:

Call: WVJP-P

Freq: 1110 kHz

CAGUAS, PR, US

Hours: N

Lat: 18-13-24.03 N

Lng: 066-01-12.80 W

Power: 0.5 kW

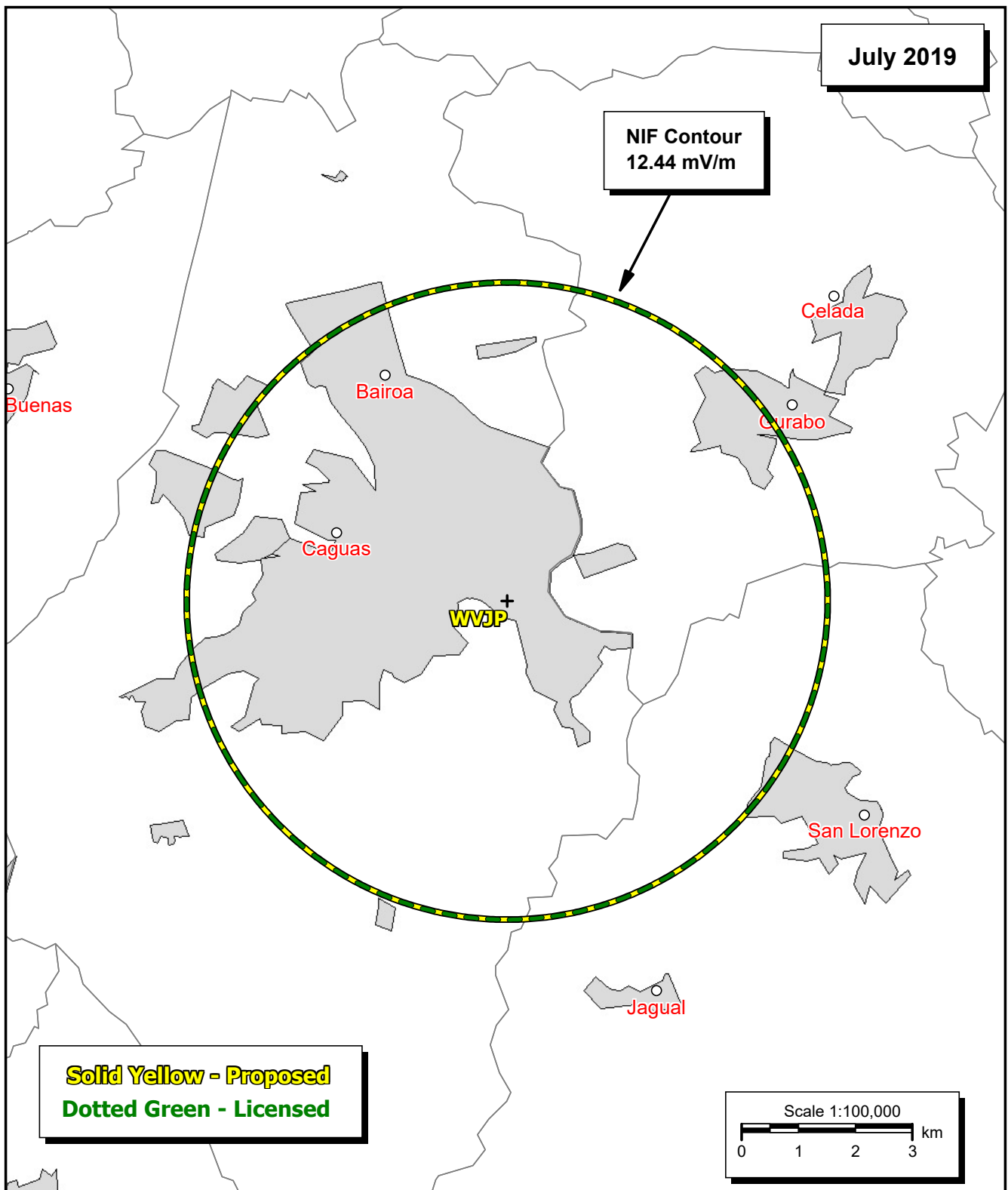
Theo RMS: 305.70 mV/m @ 1km @ 1kW

| | Field | Phase | Spacing | Orient | Height | Ref | TL | A | B | C | D |
|----|-------|-------|---------|--------|--------|-------|-------|-------|-------|-------|-------|
| # | Ratio | (deg) | (deg) | (deg) | (deg) | Swtch | Swtch | (deg) | (deg) | (deg) | (deg) |
| -- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1 | 1.000 | 0.0 | 0.0 | 0.0 | 83.2 | 0 | 1 | 83.2 | 6.7 | 0.0 | 0.0 |

| Call | | Azi | Ang Low | Ang High | SWFF | Req Prot | Permis | Cur Rad | Margin |
|-------------|-----------------|--------|---------|----------|-----------|----------|---------|---------|--------|
| Letters | Ct St City | (deg) | (deg) | (deg) | (100uV/m) | (mV/m) | (mV/m) | (mV/m) | (mV/m) |
| ----- | -- -- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| WBT.L (228) | US NC CHARLOTTE | 306.63 | 0.00 | 0.00 | 11.80 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (229) | US NC CHARLOTTE | 307.41 | 0.00 | 0.00 | 11.71 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (230) | US NC CHARLOTTE | 308.20 | 0.00 | 0.00 | 11.63 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (249) | US NC CHARLOTTE | 324.09 | 0.00 | 0.28 | 11.67 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (250) | US NC CHARLOTTE | 324.14 | 0.00 | 0.28 | 11.67 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (251) | US NC CHARLOTTE | 324.19 | 0.00 | 0.28 | 11.66 | 0.500 | 216.22E | 216.16 | 0.06 |
| WBT.L (252) | US NC CHARLOTTE | 324.22 | 0.00 | 0.28 | 11.66 | 0.500 | 216.22E | 216.16 | 0.06 |

| Call Letters | Ct | St | City | Azi (deg) | Ang Low (deg) | Ang High (deg) | SWFF (100uV/m) | Req Prot (mV/m) | Permis (mV/m) | Cur Rad (mV/m) | Margin (mV/m) |
|--|----|----|------------|--------------|------------------|-------------------|-------------------|--------------------|------------------|-------------------|------------------|
| KFAB.L (186) | US | NE | OMAHA | 304.97 | 0.00 | 0.00 | 5.74 | 0.500 | 435.92S | 216.16 | 219.75 |
| KFAB.L (187) | US | NE | OMAHA | 304.48 | 0.00 | 0.00 | 5.74 | 0.500 | 435.72S | 216.16 | 219.56 |
| KFAB.L (188) | US | NE | OMAHA | 303.99 | 0.00 | 0.00 | 5.74 | 0.500 | 435.89S | 216.16 | 219.73 |
| YVQT.O-B | VE | | CARUPANO | 160.43 | 10.14 | 10.14 | 30.37 | 2.949 | 485.38 | 211.33 | 274.05 |
| 50% = 5.897, 25% = 6.636; HJGP.O-A=3.96 HJZE.O-A=3.45 HJJP.O-A=2.68 HJDI.O-A=2.20 HJNC.O-A=2.10 | | | | | | | | | | | |
| WMSW.L | US | PR | HATILLO | 287.72 | 57.54 | 68.98 | 444.50 | 3.585 | 403.31 | 98.45 | 304.87 |
| 50% = 13.373, 25% = 14.342; YVMF.O-A=11.78 HJKQ.O-A=6.33 HJGH.O-A=5.18 | | | | | | | | | | | |
| CMKL.O-D | CU | | HOLGUIN | 286.89 | 7.26 | 7.26 | 21.35 | 3.502 | 820.33 | 213.63 | 606.70 |
| 50% = 7.005, 25% = 7.005; WBT.L=5.91 HJZE.O-A=3.76 | | | | | | | | | | | |
| HIJJ.O-C | DR | | JARABACOA | 281.79 | 19.89 | 19.89 | 49.73 | 8.665 | 871.15 | 197.96 | 673.19 |
| 50% = 4.992, 25% = 6.011; HJZE.O-A=4.37 WBT.L=2.41 WVJP.L=1.97 HJGP.O-A=1.96 HJDI.O-A=1.87 | | | | | | | | | | | |
| YVRX.O-B | VE | | VALENCIA 1 | 193.66 | 9.67 | 9.67 | 28.93 | 5.557 | 960.39 | 211.70 | 748.69 |
| 50% = 11.628, 25% = 14.033; HJZE.O-A=7.88 HJGP.O-A=6.50 HJJP.O-A=5.56 HJDI.O-A=5.14 HJNC.O-A=4.76 HJEW.O-A=3.56 | | | | | | | | | | | |

Figure 5



PROPOSED NIGHTTIME CONTOUR
WVJP 1110 KHZ 0.5 KW ND
CAGUAS, PUERTO RICO