



STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN  
APPLICATION TO AMEND AN APPLICATION  
TO MODIFY CONSTRUCTION PERMIT  
BPCDT-19991101ADE  
WRLH-DT- RICHMOND, VIRGINIA  
DT - CH. 26 – 800 kW – 319.3 M HAAT

Prepared for: WRLH 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 registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

**GENERAL**

This office has been authorized by WRLH Licensee, LLC, licensee of WRLH-TV, channel 35, and permittee of its paired DTV facility WRLH-DT, channel 26, Richmond, Virginia, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an application to amend a pending application, BMPCDT-20020114AAR, to modify the existing construction permit, BPCDT-19991101ADE, for the WRLH-DT facility. It is proposed herein to relocate the WRLH-DT transmitting antenna to a different tower support structure to be co-located with numerous other NTSC and DTV stations in the Richmond DMA in order to utilize a common panel antenna proposed to be mounted on an existing tower support structure at 37E 30' 45" N latitude, 77E 36' 05" W longitude, FCC tower database registration number 1035535. The proposed antenna will be a Dielectric panel antenna, model TUD-O5-17/70H-1-B, designed to be used by multiple

analog and digital broadcast stations. The proposed antenna utilizes an omnidirectional azimuth pattern. Additionally, it is proposed herein to modify the authorized antenna HAAT to reflect the antenna's location on the support structure. Further, it is proposed herein to reduce the Effective Radiated Power (ERP) of WRLH-DT from the 930 kW authorized in the existing Construction Permit to 800 kW. This power reduction is necessary due to the total power handling capacity of the proposed shared antenna, and to ensure compliance with the *de minimis* interference criteria contained in Section 73.623(c)(2) of the Commission's Rules.

### **PROPOSED OMNIDIRECTIONAL ANTENNA**

The proposed omnidirectional antenna is a Dielectric panel antenna, model TUD-O5-1770H-1-B, designed to be used by multiple analog and digital broadcast stations. The tower support structure will support an additional multi-channel panel antenna that is intended to be used by a number of additional television station facilities. A Vertical Plan Antenna Sketch is provided in Exhibit 1. The proposed omnidirectional transmitting antenna shall employ an electrical beam tilt of 0.50 degrees below the horizontal plane. The antenna manufacturer's vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, is attached hereto as Exhibit 2, and tabulated in Exhibit 3.

### **ALLOCATION CONSIDERATIONS**

A study was performed using the FCC's processing software "TV-Process" to determine if any level of new interference would be caused to other stations based upon

the WRLH-DT facilities proposed herein. Results indicated that WRLH-DT can broadcast its DTV signal on channel 26 utilizing the proposed antenna with 800 kW ERP, at 319.3 meters HAAT, without causing unacceptable interference to the facility of any full service DT or NTSC station, as reflected in the allotment, application, construction permit, or license, nor would unacceptable contour overlap be created, or increased, in the direction of any Class A television station. The licensed principal community of Richmond, Virginia is fully encompassed by the 48 dBu F(50,90) "city grade" contour of the proposed WRLH-DT facility, as shown in Exhibit 4.

### **BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed WRLH-DT transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

### **ENVIRONMENTAL CONSIDERATIONS**

#### **GENERAL**

The proposal described herein meets the criteria specified in Section 1.1306 of the FCC Rules and Regulations as an action, which is categorically excluded from environmental processing. The proposed TV facility involves neither a site location specified under Section 1.1307(a)(1)-(7) of the Rules nor high intensity lighting as specified in Section 1.1307(a)(8).

### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997, the FCC adopted revised guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are now 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, Inc. (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The revised guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations as well as "uncontrolled" situations that apply in cases that affect the general public. The FCC's Office of Engineering and Technology (OET) revised technical bulletin (OET Bulletin No. 65) entitled, "*Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*" (Edition 97-01, August 1997), to aid in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. The revised Bulletin 65, and Supplement A, "*Additional Information for Radio and Television Broadcast Stations*", contains updated and additional technical information for evaluating compliance with the FCC's current policies and guidelines.

The currently acceptable FCC MPE level for "uncontrolled" environments is derived from the formula,  $(\text{frequency}/1500)$ , for UHF TV stations. The MPE level for UHF stations in a "controlled" environment is derived from the formula,  $(\text{frequency}/300)$ . We must

consider the contributions of our own station, WRLH-DT channel 26, and the other broadcast stations sharing the two panel antennas proposed on the support structure. For WRLH-DT, which operates on television Channel 26 (545 MHz), the MPE is 0.363 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an "uncontrolled" environment and 1.815  $\text{mW}/\text{cm}^2$  in a "controlled" environment.

The proposed WRLH-DT facility will operate with a maximum ERP of 800 kW from a horizontally polarized omnidirectional transmitting antenna with a centerline height of 276.4 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WRLH facility produces a predicted power density at two meters above ground level of .03203  $\text{mW}/\text{cm}^2$ , which is 8.82% of the new FCC guideline value for "uncontrolled" environments, and 1.764% of the new FCC guideline value for "controlled" environments (for a detailed list of predicted power densities for each station, see Appendix A).

The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations at the site, is only 54.31% of the limit for "uncontrolled" environments, and 10.86% of the limit for "controlled" environments.

### **OCCUPATIONAL SAFETY**

The licensee of WRLH-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WRLH-DT antenna. The applicant is committed to entering into an agreement with the other stations that will utilize the proposed antenna to reduce power and/or cease operation during times of service or

STATEMENT OF JOHN E. HIDLE, P.E.  
WRLH-DT - RICHMOND, VIRGINIA  
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maintenance of the transmission systems, when necessary, to ensure protection to personnel. As an additional safety measure, the base of the tower will be fenced to preclude casual access.

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

**SUMMARY**

It is submitted that the proposal described herein complies with the Rules and Regulations of the Federal Communications Commission. This statement, FCC Form 301, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct.

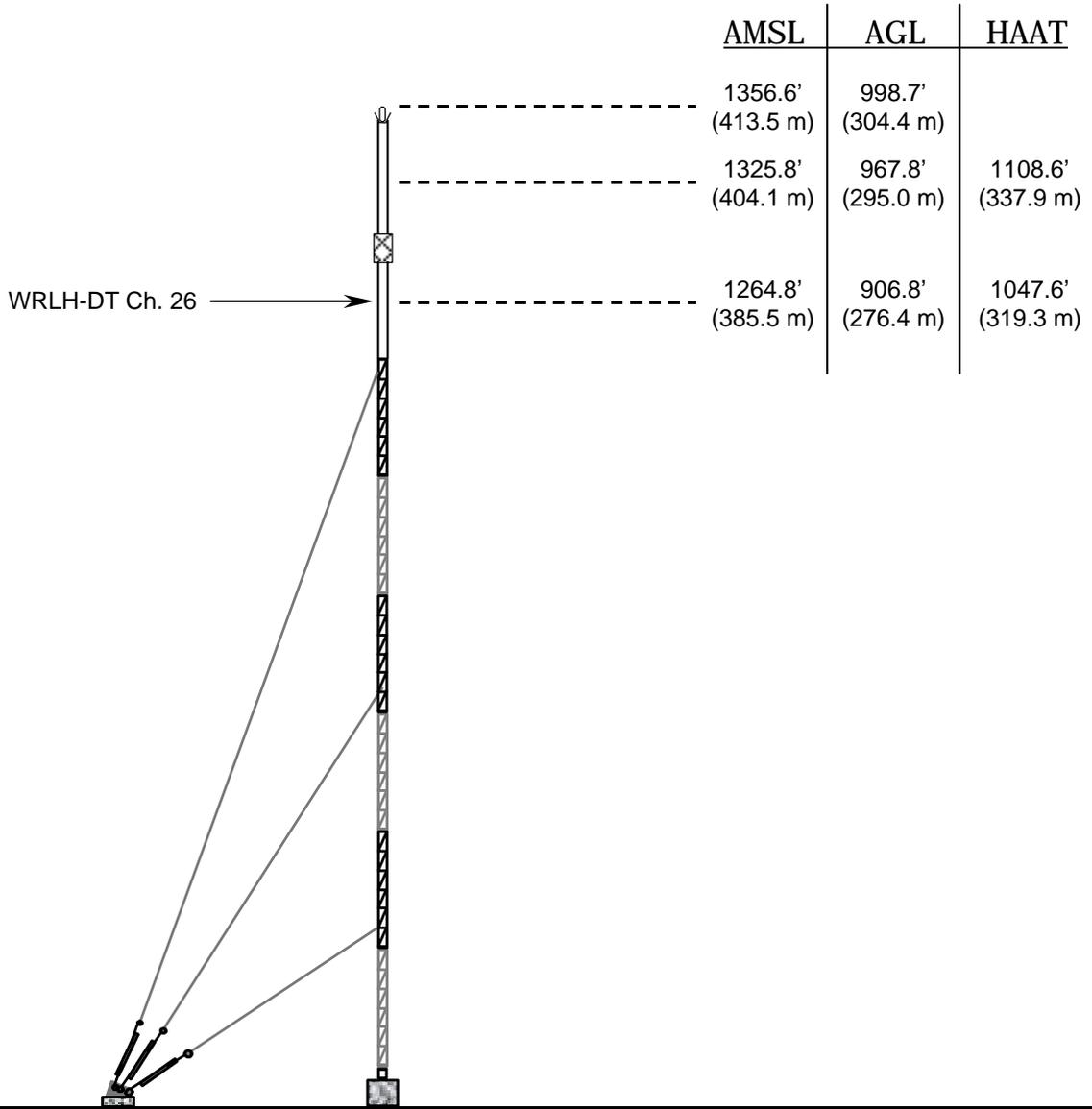
DATED: March 25, 2002

  
John E. Hidle, P.E.



**COORDINATES NAD-27**  
 NORTH LATITUDE: 37° 30' 45"  
 WEST LONGITUDE: 77° 36' 05"

**EXHIBIT 1**



GROUND ELEVATION = 358' (109.1 m) A.M.S.L. / AVERAGE TERRAIN = 217.2' (66.2 m) A.M.S.L.

**VERTICAL PLAN ANTENNA SKETCH**  
 WRLH-DT - RICHMOND, VIRGINIA  
 800 kW ERP - 319.3 m HAAT  
 MARCH, 2002

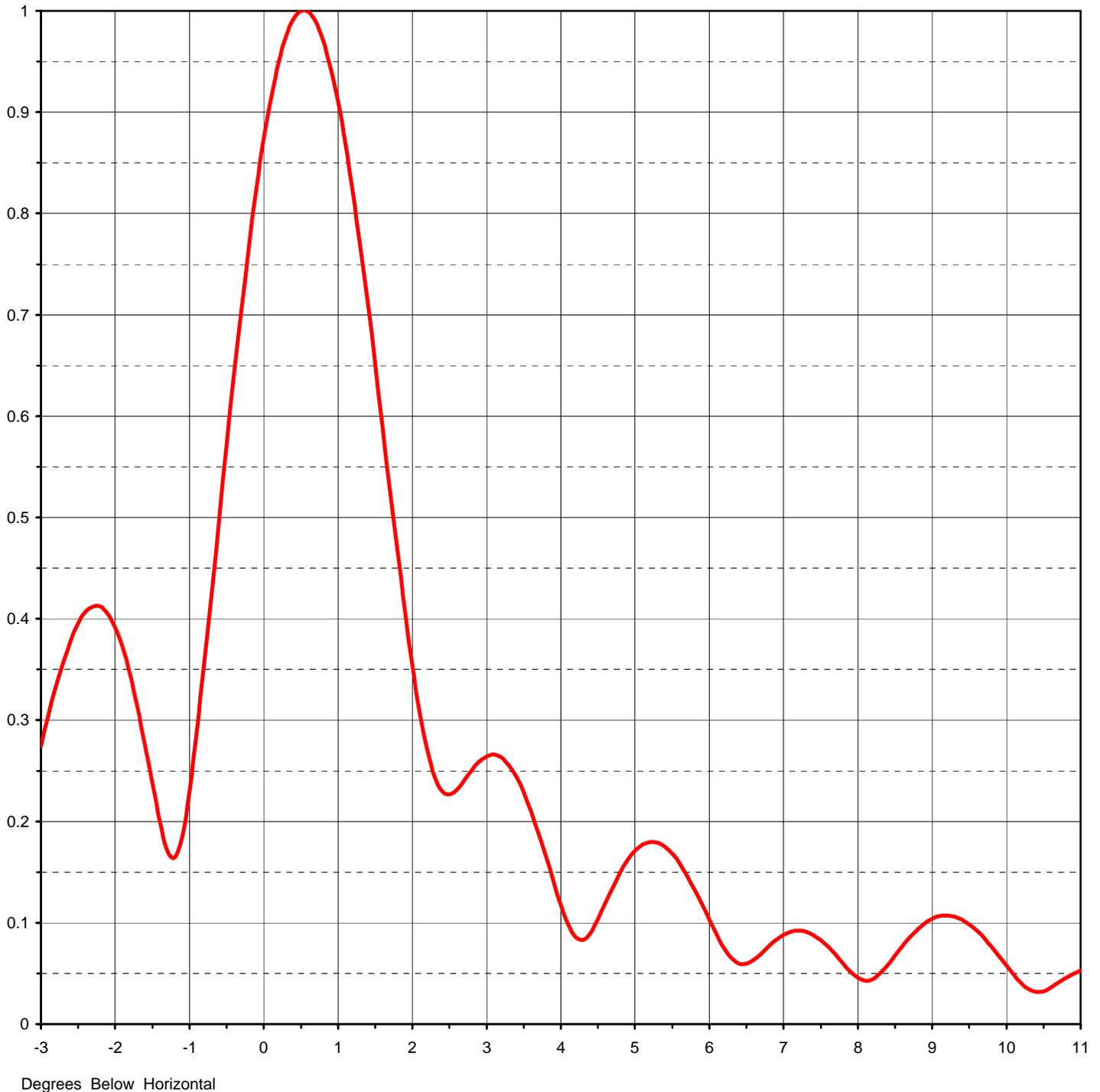
**CARL T. JONES**  
 CORPORATION

NOTE : NOT DRAWN TO SCALE

Proposal Number **DCA-9505**  
Date **31-Jul-01**  
Call Letters **WRLH-DT** Channel **26**  
Location **Richmond, VA**  
Customer  
Antenna Type **TUD-O5-14/70H-1-B**

### ELEVATION PATTERN

RMS Gain at Main Lobe **26.70 ( 14.27 dB )** Beam Tilt **0.50 deg**  
RMS Gain at Horizontal **20.40 ( 13.10 dB )** Frequency **545.00 MHz**  
Calculated / Measured **Calculated** Drawing # **14U267050-545B**

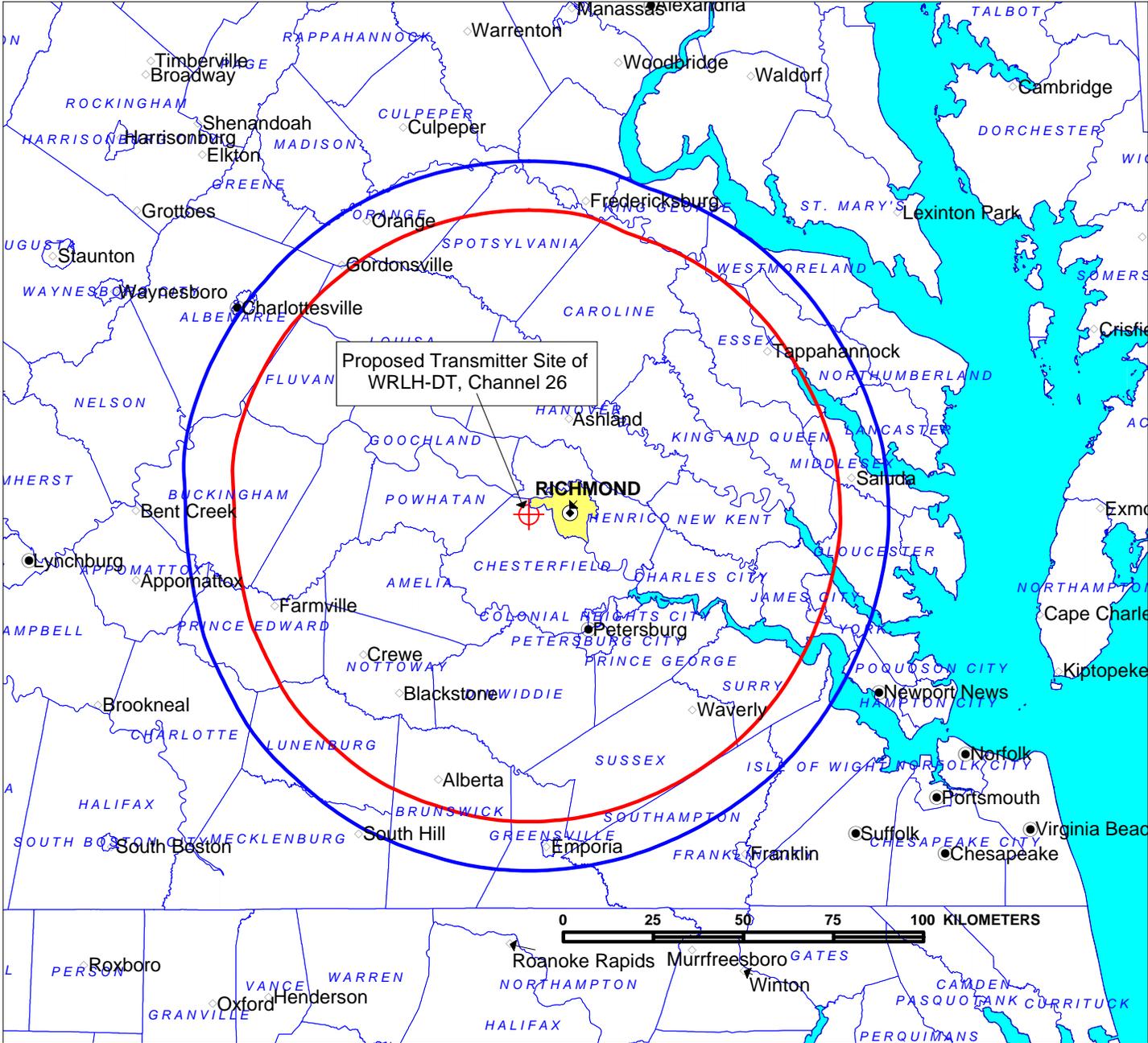


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## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **14U267050-545B-90**

Angle	Field										
-10.0	0.090	2.4	0.230	10.6	0.032	30.5	0.043	51.0	0.028	71.5	0.109
-9.5	0.059	2.6	0.231	10.8	0.041	31.0	0.023	51.5	0.023	72.0	0.115
-9.0	0.037	2.8	0.250	11.0	0.050	31.5	0.020	52.0	0.015	72.5	0.119
-8.5	0.059	3.0	0.264	11.5	0.053	32.0	0.023	52.5	0.011	73.0	0.119
-8.0	0.056	3.2	0.263	12.0	0.031	32.5	0.021	53.0	0.014	73.5	0.117
-7.5	0.045	3.4	0.244	12.5	0.043	33.0	0.013	53.5	0.017	74.0	0.113
-7.0	0.098	3.6	0.210	13.0	0.072	33.5	0.009	54.0	0.017	74.5	0.108
-6.5	0.148	3.8	0.165	13.5	0.075	34.0	0.016	54.5	0.014	75.0	0.101
-6.0	0.147	4.0	0.118	14.0	0.050	34.5	0.022	55.0	0.012	75.5	0.094
-5.5	0.094	4.2	0.086	14.5	0.024	35.0	0.021	55.5	0.017	76.0	0.085
-5.0	0.054	4.4	0.090	15.0	0.035	35.5	0.015	56.0	0.026	76.5	0.077
-4.5	0.079	4.6	0.119	15.5	0.038	36.0	0.009	56.5	0.034	77.0	0.069
-4.0	0.066	4.8	0.150	16.0	0.023	36.5	0.013	57.0	0.038	77.5	0.060
-3.5	0.119	5.0	0.171	16.5	0.034	37.0	0.016	57.5	0.038	78.0	0.053
-3.0	0.274	5.2	0.180	17.0	0.057	37.5	0.014	58.0	0.034	78.5	0.046
-2.8	0.333	5.4	0.175	17.5	0.061	38.0	0.009	58.5	0.027	79.0	0.040
-2.6	0.379	5.6	0.159	18.0	0.043	38.5	0.013	59.0	0.018	79.5	0.034
-2.4	0.407	5.8	0.133	18.5	0.022	39.0	0.021	59.5	0.013	80.0	0.029
-2.2	0.412	6.0	0.103	19.0	0.028	39.5	0.025	60.0	0.014	80.5	0.025
-2.0	0.391	6.2	0.075	19.5	0.032	40.0	0.023	60.5	0.017	81.0	0.022
-1.8	0.345	6.4	0.060	20.0	0.022	40.5	0.015	61.0	0.017	81.5	0.019
-1.6	0.276	6.6	0.063	20.5	0.030	41.0	0.009	61.5	0.015	82.0	0.018
-1.4	0.200	6.8	0.077	21.0	0.054	41.5	0.012	62.0	0.013	82.5	0.016
-1.2	0.164	7.0	0.088	21.5	0.063	42.0	0.016	62.5	0.017	83.0	0.016
-1.0	0.230	7.2	0.092	22.0	0.052	42.5	0.015	63.0	0.028	83.5	0.015
-0.8	0.357	7.4	0.088	22.5	0.028	43.0	0.010	63.5	0.041	84.0	0.015
-0.6	0.500	7.6	0.076	23.0	0.019	43.5	0.011	64.0	0.054	84.5	0.015
-0.4	0.641	7.8	0.060	23.5	0.024	44.0	0.019	64.5	0.065	85.0	0.015
-0.2	0.769	8.0	0.046	24.0	0.018	44.5	0.026	65.0	0.071	85.5	0.014
0.0	0.873	8.2	0.044	24.5	0.027	45.0	0.027	65.5	0.073	86.0	0.014
0.2	0.949	8.4	0.058	25.0	0.057	45.5	0.022	66.0	0.069	86.5	0.014
0.4	0.992	8.6	0.077	25.5	0.079	46.0	0.014	66.5	0.062	87.0	0.014
0.6	0.999	8.8	0.093	26.0	0.080	46.5	0.009	67.0	0.050	87.5	0.013
0.8	0.971	9.0	0.104	26.5	0.058	47.0	0.013	67.5	0.037	88.0	0.013
1.0	0.910	9.2	0.107	27.0	0.027	47.5	0.016	68.0	0.027	88.5	0.013
1.2	0.821	9.4	0.103	27.5	0.048	48.0	0.015	68.5	0.027	89.0	0.013
1.4	0.711	9.6	0.092	28.0	0.086	48.5	0.011	69.0	0.040	89.5	0.012
1.6	0.590	9.8	0.085	28.5	0.108	49.0	0.010	69.5	0.056	90.0	0.012
1.8	0.467	10.0	0.067	29.0	0.109	49.5	0.018	70.0	0.072		
2.0	0.355	10.2	0.049	29.5	0.095	50.0	0.026	70.5	0.087		
2.2	0.271	10.4	0.034	30.0	0.069	50.5	0.030	71.0	0.099		



WRLH-DT Proposed Facility  
48 dBu F(50,90) City Grade Contour

WRLH-DT Proposed Facility  
41 dBu F(50,90) Protected Contour

Richmond City Area

**WRLH-DT Channel 26, Richmond, VA**  
**Coverage Contours of Proposed Facility**  
**800 kW ERP; 319.3 m HAAT; Omnidirectional**  
**March, 2002**

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WRLH-DT, Richmond, Virginia  
CHANNEL 26, 800 kW (MAX), 319.3 m HAAT  
March, 2002

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT **</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>
WRLH-DT	DT	26	545	H	274	800.000	0.300	0.03203	0.363	8.82%
WRIC-TV	TV	8	183	H	310	800.000	0.300	0.01252	0.200	6.26%
WRIC-DT	DT	22	521	H	283	800.000	0.300	0.03003	0.347	8.64%
WCVE-TV	TV	23	527	H	310	2950.000	0.300	0.04615	0.351	13.14%
WCVE-DT	DT	24	533	H	310	800.000	0.300	0.02502	0.355	7.04%
WCVW-TV	TV	42	641	H	283	800.000	0.300	0.01502	0.427	3.51%
WCVW-DT	DT	44	653	H	283	800.000	0.300	0.03003	0.435	6.90%

**TOTAL PERCENTAGE OF ANSI VALUE= 54.31%**

*\*\* 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.*