

**STATEMENT OF JOHN E. HIDLE JR.  
IN SUPPORT OF AN APPLICATION FOR  
MODIFICATION OF CONSTRUCTION PERMIT  
BPCDT-19991101AIK  
WVAH-DT – CHARLESTON, WEST VIRGINIA  
DT – CH. 19 – 475 KW ERP – 504.5 M HAAT**

**JULY, 2003**

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Prepared for: WVAH LICENSEE, LLC.

I am an 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.

**GENERAL**

This office has been authorized by WVAH Licensee, LLC., permittee of WVAH-DT Channel 19, Charleston, West Virginia, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an Application for Modification of Construction Permit to utilize a common antenna for the WVAH-DT facility on the replacement tower to be constructed at the existing site of WVAH-TV, Charleston, West Virginia, at 38° 25' 15" NL, 081° 55' 27" WL. The proposed new structure will replace the WVAH-TV structure that collapsed during a winter storm in February, 2003, and will be designed to accommodate the television facilities of both the DTV and NTSC facilities of WCHS-TV and WVAH-TV, which will serve to lessen the

effects of the "receive antenna orientation problem" that results when television transmission systems are scattered in multiple locations within a television market area.

### **PROPOSED NON-DIRECTIONAL ANTENNA**

The applicant proposes to utilize a Dielectric model TUC-O5-10/50H-1-B non-directional "panel" type transmitting antenna, which will be shared with the digital facility of WCHS-DT channel 41, and which is proposed to support the separate transmitting antennas of WVAH-TV channel 11, and WCHS-TV channel 8, in a stacked configuration, top-mounted on the new WVAH-TV tower. A Vertical Plan Antenna Sketch showing the various elevations at the proposed site is provided in Exhibit 1. Elevation patterns for the proposed antenna are provided in Exhibits 2A and 2B, and tabulated in Exhibit 3.

### **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699), power, and antenna height above average terrain as determined in each profile radial. The average terrain, antenna site elevation, and coordinates at the WVAH site were obtained from the existing WVAH-TV license, file number BLCT-19880421KF. Exhibit 4 shows the principal community of license Charleston, West Virginia, is completely encompassed by the predicted 48 dBu coverage contour of the proposed facility of WVAH-DT.

## **ALLOCATION CONSIDERATIONS**

### ***Full Service Television Considerations***

A study was performed using the FCC's Longley-Rice program "TV-Process" to determine if the facility proposed herein would cause any interference to any full service NTSC or DTV station beyond acceptable *de minimis* levels. TV-Process indicated no unacceptable interference to the authorized or requested facility of any full service NTSC or DTV station.

### ***Class A Television Considerations***

As required in Section 73.623 of the FCC's Rules, as established in the Report and Order establishing Class A Television Service, released April 4, 2000, a study of interference contour overlap was performed. The protection requirement is based on a showing that a proposal for a new or modified facility does not create prohibited contour overlap. However, a DTV station is allowed contour overlap to a Class A station that already exists based upon the requested facility of the DTV station filed on or before December 31, 1999, or filed between December 31, 1999 and April 30, 2000, pursuant to a letter of intent to maximize submitted on or before December 31, 1999. A full service UHF DTV station must provide protection of at least 34 dB based on an F(50,10) interference contour as calculated according to the method in 47 CFR Section 73.699, to the protected 74 dBu F(50,50) contour of a UHF co-channel Class A station. Therefore, the 40 dBu F(50,10) "interference contour" of a full service DTV station may not overlap the 74 dBu F(50,50) "protected contour" of a Class A television station.

A study of contour overlap indicated that the instant proposed facility of WVAH-DT is not predicted to cause new prohibited contour overlap, or increase existing contour overlap to any Class A Television station, with the exception of co-channel station WCLL-LP, channel 19, Columbus, Ohio. WCLL-LP is located 195.2 km from the site of WVAH-DT, at an azimuth of approximately 332° True North. An initial contour overlap study indicated the existence of substantial 40 dBu F(50,10) contour overlap of the protected 74 dBu F(50,50) protected contour of WCLL-LP's facility, based upon the current authorized facility of WVAH-DT, as reflected in its Construction Permit, file number BPCDT-19991101AIK, accepted for filing on November 1, 1999, and granted on June 4, 2001. WVAH-DT may maintain this existing overlap in a request to modify its facilities, pursuant to §73.623(c)(5) of the Rules. A study of contour overlap based upon the instant proposal predicted a very minor increase of existing contour overlap, based upon a comparison of the 40 dBu F(50,10) interference contours of the authorized and proposed facilities of WVAH-DT. See Exhibit 5. However, §73.623(c)(5) (iii) of the Rules states that in support of a request for a waiver of the contour overlap based protection requirements, an applicant for a full service DTV station may make full use of Longley-Rice terrain shielding to show that a proposal is unlikely to cause interference to a Class A television station. Several point-to-point Longley-Rice terrain shielding studies were performed using EDX version 4.1.0, to determine whether line of sight is obstructed by terrain between the WVAH-DT site, and a number of points along the arc of contour overlap from WVAH-DT to WCLL-LP. Results indicated that in all cases studied, the path between the WVAH-DT and the area of predicted contour

overlap is completely terrain-shielded, such that it is very unlikely that WCLL-LP would receive interference from either the existing authorized facility of WVAH-DT, or the instant proposal. An example of this result is included in Exhibit 7. Therefore, the applicant respectfully requests a waiver of the Commission's contour-overlap protection requirements for Class A Television, based upon a showing of Longley-Rice terrain-shielding as set forth in §73.623(c) (5) (iii) of the Rules.

### **BLANKETING AND INTERMODULATION INTERFERENCE**

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

### **ENVIRONMENTAL CONSIDERATIONS**

#### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997, the FCC adopted guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines 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, Inc. (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The 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) has issued a 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 Bulletin contains updated and additional technical information for evaluating compliance with FCC policies and guidelines.

The FCC’s MPE level for “uncontrolled” environments is 0.2 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHz and 1500 MHz, primarily UHF TV stations, is derived from the formula,  $(\text{frequency}/1500)$ . The MPE level for “controlled” environments is 1.0 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) for operations between 30 MHz and 300 MHz, and for UHF stations in a “controlled” environment is derived from the formula,  $(\text{frequency}/300)$ . For WVAH-DT, which operates on television Channel 19 (503 MHz), the MPE is 0.335 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an “uncontrolled” environment and 1.675  $\text{mW}/\text{cm}^2$  in a “controlled” environment.

The proposed WVAH-DT facility will operate with a maximum ERP of 475 kW from a horizontally polarized non-directional transmitting antenna with a centerline height of 447.9 meters above ground level (AGL). Considering a very conservative



vertical plane relative field factor of 0.3, the WVAH-DT facility produces a predicted power density at two meters above ground level of .00718 mW/cm<sup>2</sup>, which is 2.14% of the new FCC guideline value for "uncontrolled" environments, and 0.428% of the new FCC guideline value for "controlled" environments (for a detailed list of all stations, 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 6.72% of the limit for "uncontrolled" environments, and 1.34% of the limit for "controlled" environments.

### **OCCUPATIONAL SAFETY**

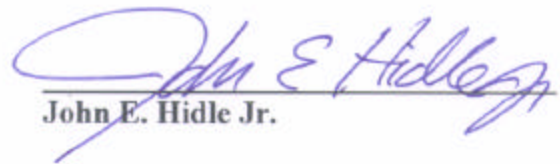
The licensee of WVAH-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WVAH-DT antenna. The applicant is committed to entering into an agreement with the other stations that will utilize the proposed antenna to reduce power and/or cease operation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

In light of the above, the proposed WVAH-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, with the exception of the protection requirement for Class A Television, for which a waiver has been requested. 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: July 10, 2003**

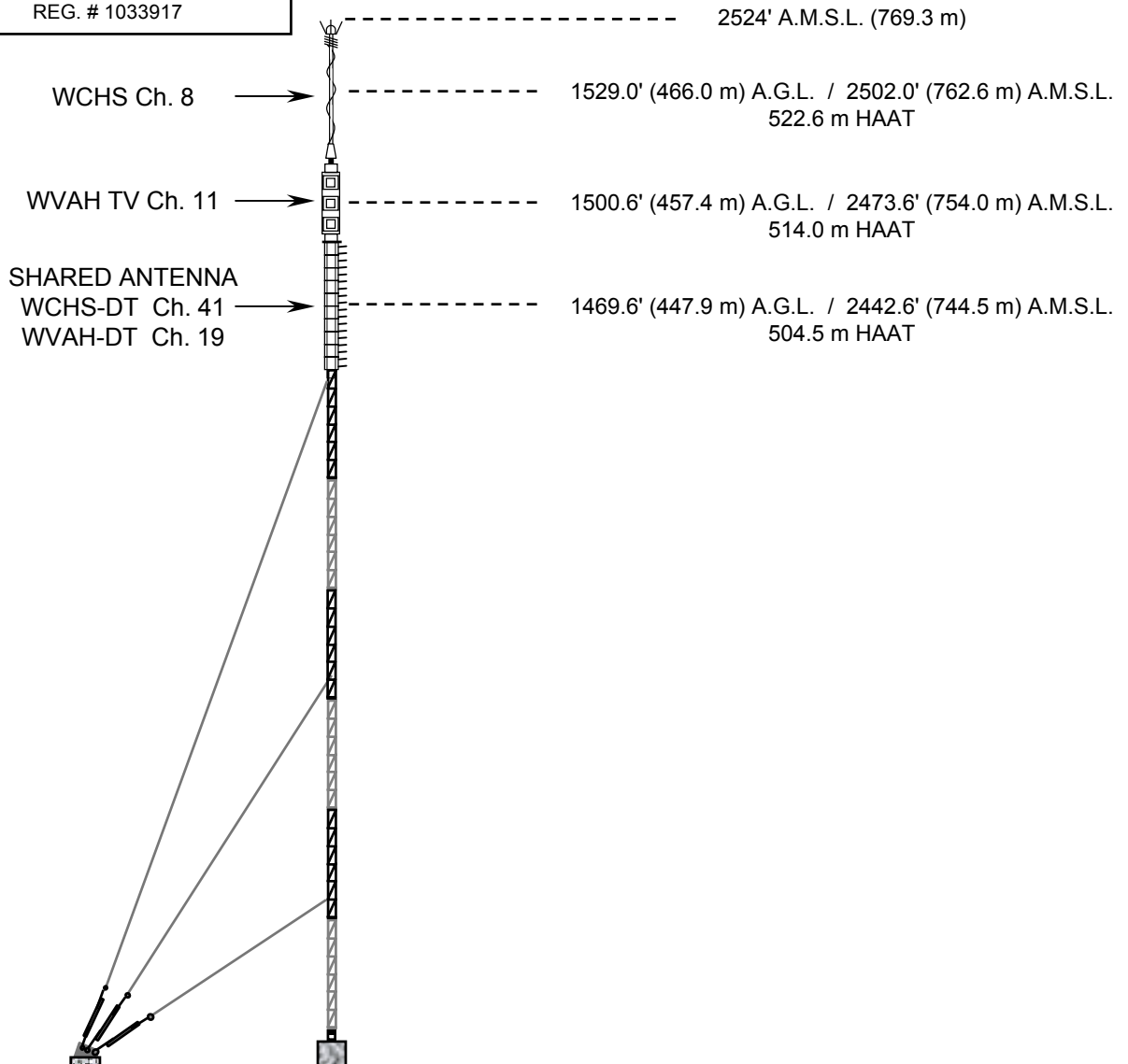


John E. Hidle Jr.

COORDINATES NAD-27

NORTH LATITUDE: 38° 25' 15.0"  
WEST LONGITUDE: 81° 55' 27.0"  
REG. # 1033917

**EXHIBIT 1**



**VERTICAL PLAN ANTENNA SKETCH**  
WVAH-DT - CHARLESTON, WEST VIRGINIA  
Ch. 19 - 475 kW ERP - 504.5 m HAAT  
AT WVAH TOWER SITE  
JULY, 2003

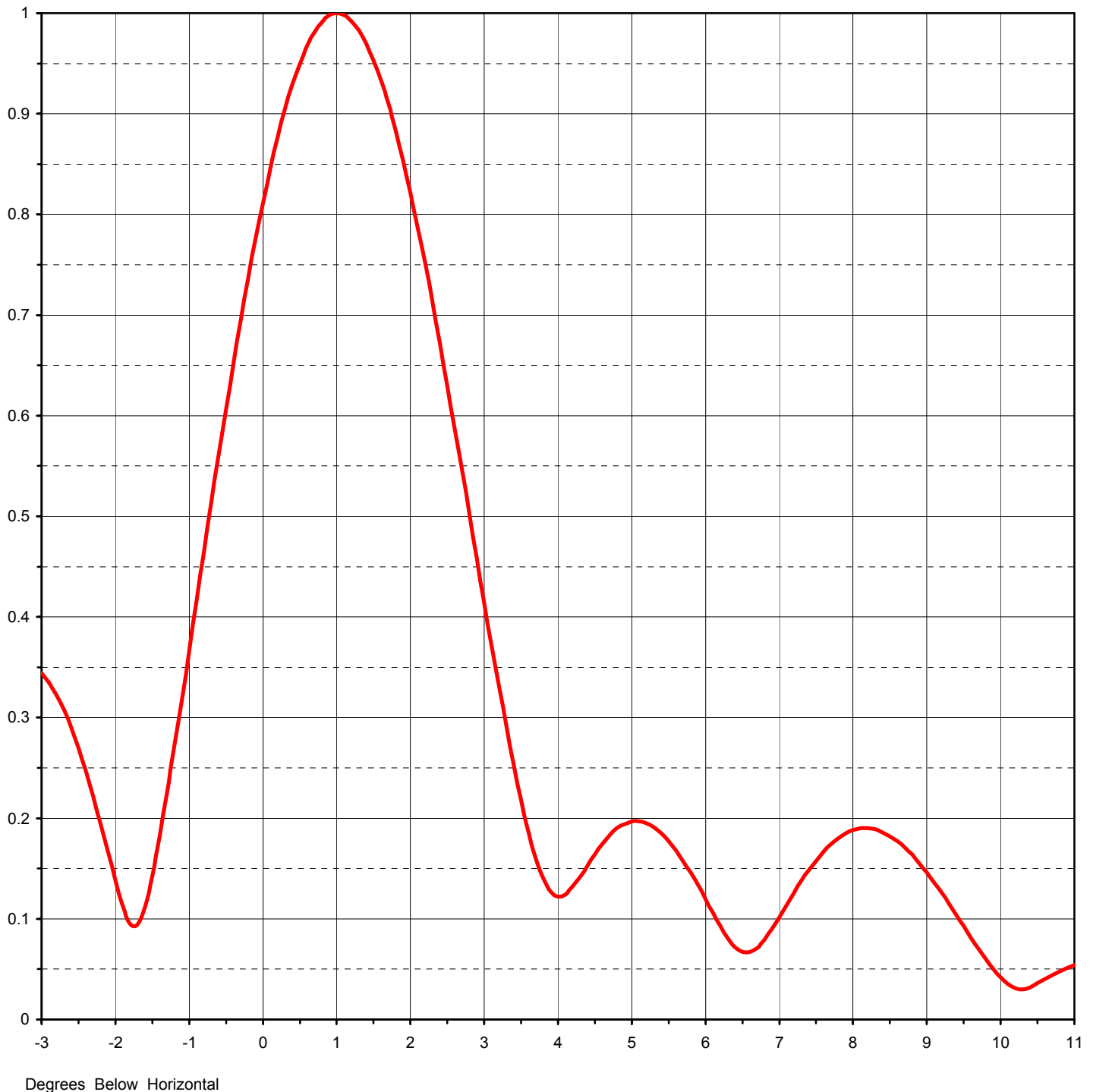
**CARL T. JONES**  
CORPORATION

NOTE : NOT DRAWN TO SCALE

Date	<b>4-Mar-03</b>	
Call Letters	<b>WVAH-DT</b>	Channel <b>19</b>
Location	<b>Charleston, WV</b>	
Customer	<b>Sinclair</b>	
Antenna Type	<b>TUC-O5-10/50H-1-B</b>	

## ELEVATION PATTERN

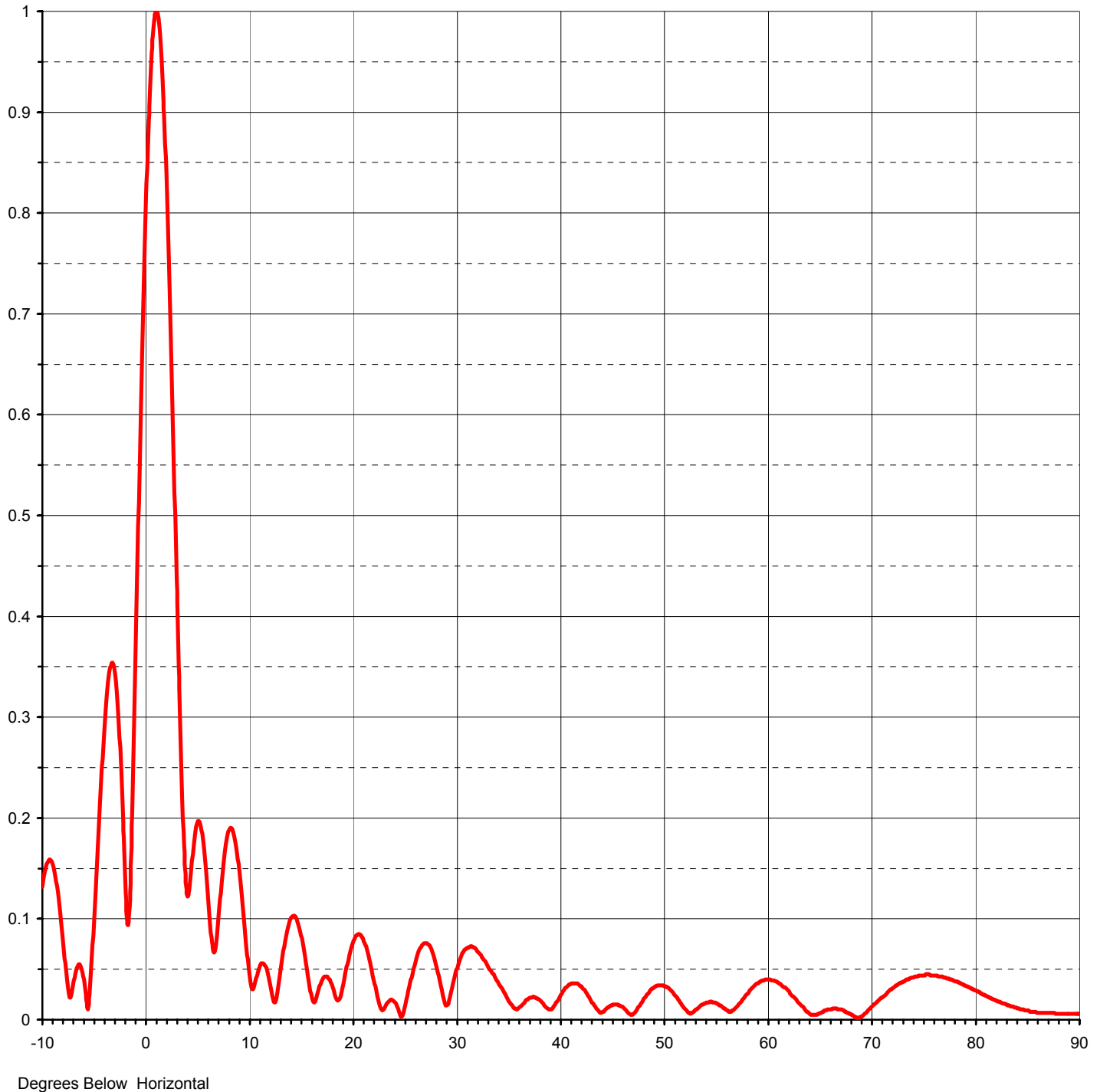
RMS Gain at Main Lobe	<b>19.80 ( 12.97 dB )</b>	Beam Tilt	<b>1.00 deg</b>
RMS Gain at Horizontal	<b>13.10 ( 11.17 dB )</b>	Frequency	<b>503.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>10U198100</b>



Date	<b>4-Mar-03</b>	Channel	<b>19</b>
Call Letters	<b>WVAH-DT</b>		
Location	<b>Charleston, WV</b>		
Customer	<b>Sinclair</b>		
Antenna Type	<b>TUC-O5-10/50H-1-B</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>19.80 ( 12.97 dB )</b>	Beam Tilt	<b>1.00 deg</b>
RMS Gain at Horizontal	<b>13.10 ( 11.17 dB )</b>	Frequency	<b>503.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>10U198100-90</b>



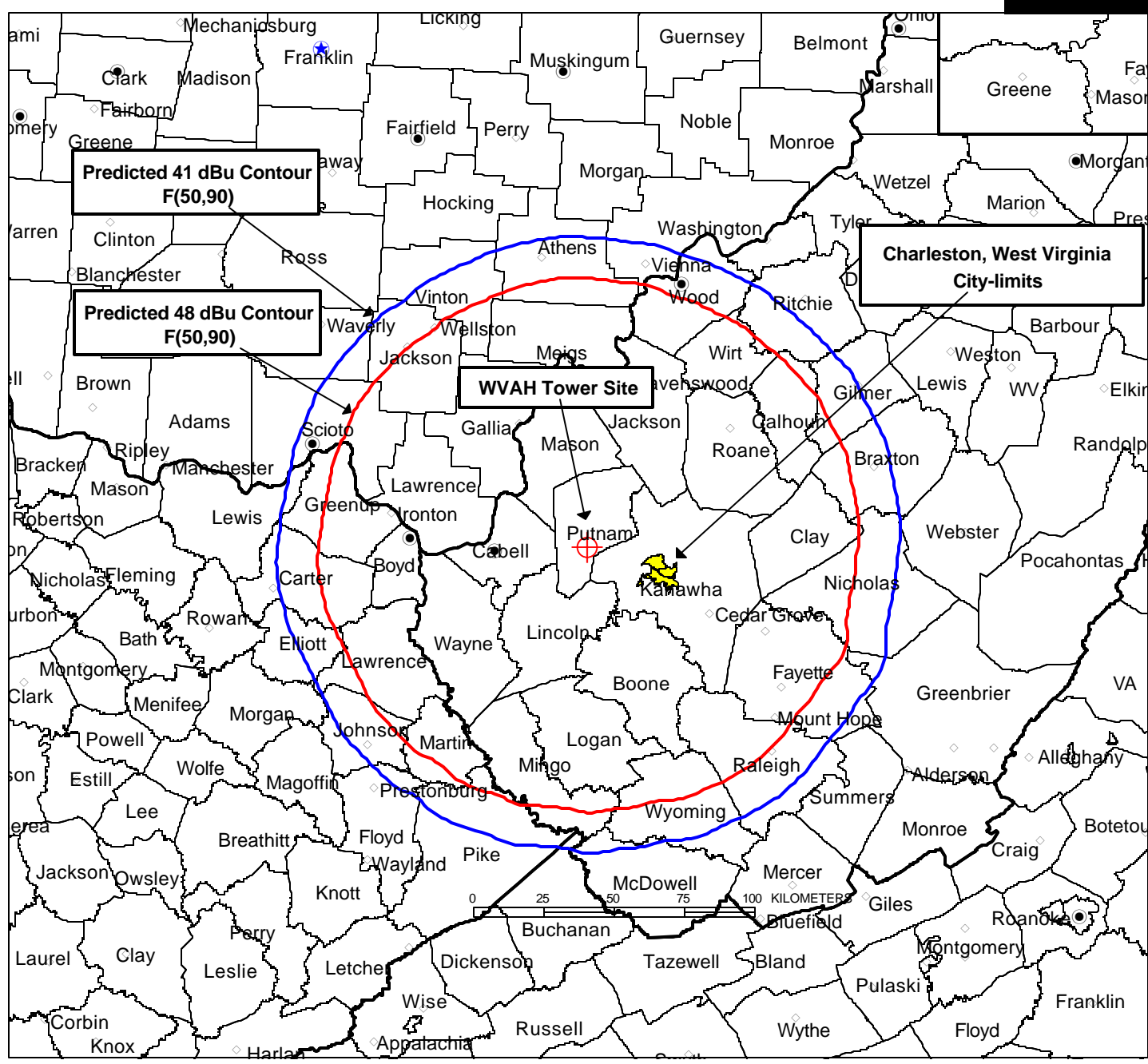


Date **4-Mar-03**  
 Call Letters **WVAH-DT** Channel **19**  
 Location **Charleston, WV**  
 Customer **Sinclair**  
 Antenna Type **TUC-O5-10/50H-1-B**

## TABULATION OF ELEVATION PATTERN

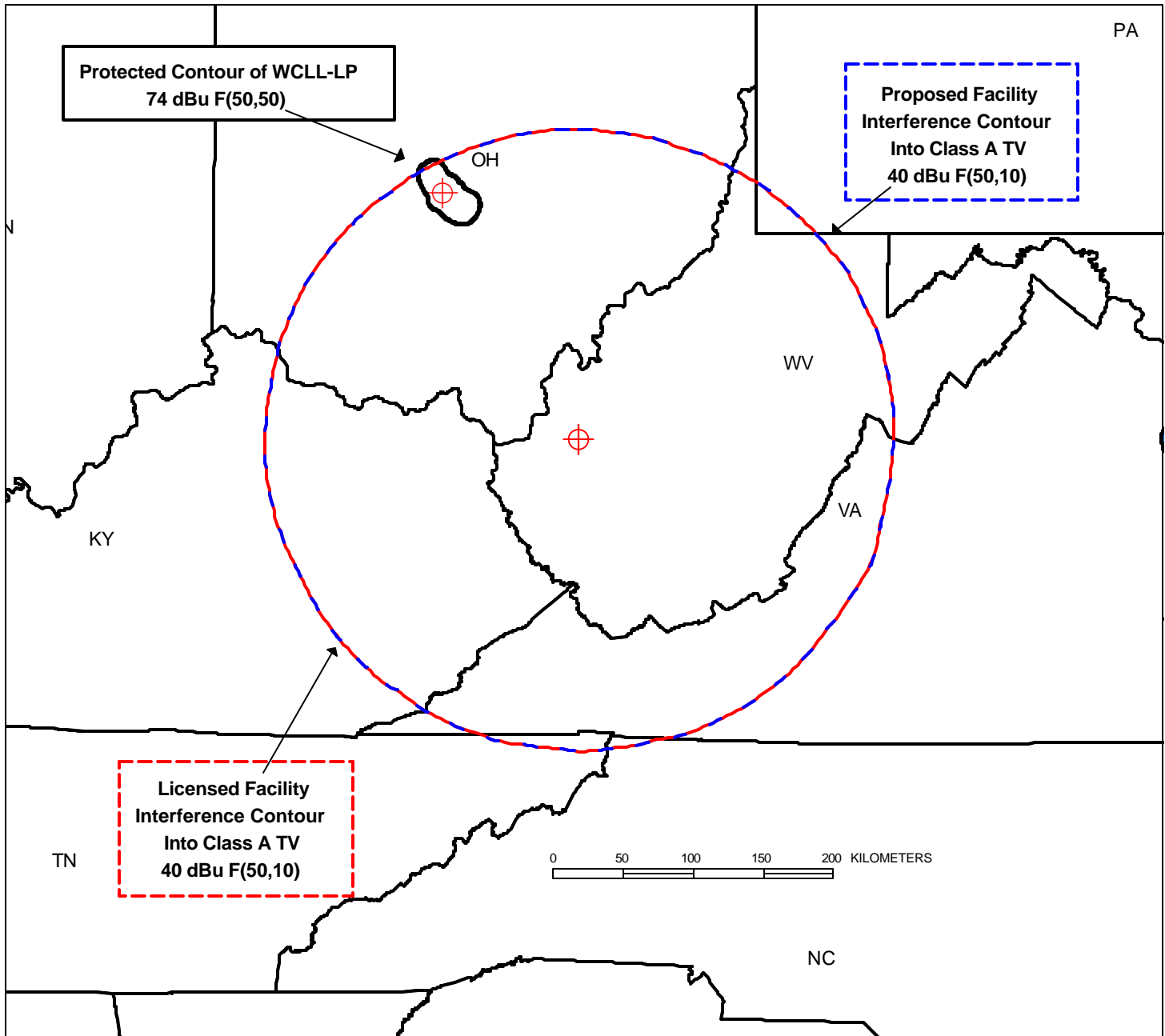
Elevation Pattern Drawing #: **10U198100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.132	2.4	0.672	10.6	0.036	30.5	0.063	51.0	0.026	71.5	0.027
-9.5	0.156	2.6	0.588	10.8	0.044	31.0	0.071	51.5	0.019	72.0	0.031
-9.0	0.154	2.8	0.501	11.0	0.051	31.5	0.073	52.0	0.011	72.5	0.035
-8.5	0.126	3.0	0.414	11.5	0.055	32.0	0.068	52.5	0.007	73.0	0.038
-8.0	0.078	3.2	0.330	12.0	0.038	32.5	0.062	53.0	0.009	73.5	0.040
-7.5	0.029	3.4	0.253	12.5	0.017	33.0	0.054	53.5	0.013	74.0	0.042
-7.0	0.036	3.6	0.187	13.0	0.044	33.5	0.046	54.0	0.016	74.5	0.044
-6.5	0.055	3.8	0.140	13.5	0.078	34.0	0.038	54.5	0.018	75.0	0.044
-6.0	0.040	4.0	0.122	14.0	0.099	34.5	0.029	55.0	0.017	75.5	0.045
-5.5	0.018	4.2	0.132	14.5	0.102	35.0	0.020	55.5	0.014	76.0	0.044
-5.0	0.102	4.4	0.153	15.0	0.086	35.5	0.012	56.0	0.010	76.5	0.043
-4.5	0.201	4.6	0.174	15.5	0.057	36.0	0.011	56.5	0.008	77.0	0.042
-4.0	0.292	4.8	0.190	16.0	0.026	36.5	0.016	57.0	0.012	77.5	0.040
-3.5	0.347	5.0	0.197	16.5	0.021	37.0	0.021	57.5	0.018	78.0	0.038
-3.0	0.344	5.2	0.195	17.0	0.038	37.5	0.023	58.0	0.025	78.5	0.036
-2.8	0.323	5.4	0.185	17.5	0.043	38.0	0.020	58.5	0.031	79.0	0.034
-2.6	0.290	5.6	0.168	18.0	0.035	38.5	0.014	59.0	0.036	79.5	0.031
-2.4	0.247	5.8	0.146	18.5	0.020	39.0	0.010	59.5	0.039	80.0	0.029
-2.2	0.195	6.0	0.119	19.0	0.030	39.5	0.014	60.0	0.040	80.5	0.026
-2.0	0.138	6.2	0.093	19.5	0.055	40.0	0.023	60.5	0.039	81.0	0.024
-1.8	0.095	6.4	0.072	20.0	0.075	40.5	0.031	61.0	0.037	81.5	0.021
-1.6	0.112	6.6	0.067	20.5	0.084	41.0	0.035	61.5	0.033	82.0	0.019
-1.4	0.182	6.8	0.079	21.0	0.081	41.5	0.036	62.0	0.029	82.5	0.017
-1.2	0.271	7.0	0.102	21.5	0.065	42.0	0.033	62.5	0.023	83.0	0.015
-1.0	0.367	7.2	0.126	22.0	0.042	42.5	0.027	63.0	0.017	83.5	0.013
-0.8	0.464	7.4	0.148	22.5	0.019	43.0	0.019	63.5	0.012	84.0	0.011
-0.6	0.560	7.6	0.167	23.0	0.010	43.5	0.011	64.0	0.007	84.5	0.010
-0.4	0.652	7.8	0.180	23.5	0.018	44.0	0.007	64.5	0.005	85.0	0.009
-0.2	0.736	8.0	0.188	24.0	0.018	44.5	0.011	65.0	0.007	85.5	0.008
0.0	0.812	8.2	0.190	24.5	0.008	45.0	0.014	65.5	0.009	86.0	0.007
0.2	0.877	8.4	0.186	25.0	0.011	45.5	0.015	66.0	0.010	86.5	0.007
0.4	0.929	8.6	0.177	25.5	0.033	46.0	0.013	66.5	0.011	87.0	0.007
0.6	0.968	8.8	0.164	26.0	0.054	46.5	0.008	67.0	0.010	87.5	0.007
0.8	0.991	9.0	0.146	26.5	0.070	47.0	0.005	67.5	0.008	88.0	0.006
1.0	1.000	9.2	0.126	27.0	0.076	47.5	0.011	68.0	0.005	88.5	0.006
1.2	0.992	9.4	0.104	27.5	0.072	48.0	0.019	68.5	0.002	89.0	0.006
1.4	0.970	9.6	0.081	28.0	0.057	48.5	0.026	69.0	0.003	89.5	0.006
1.6	0.933	9.8	0.070	28.5	0.034	49.0	0.031	69.5	0.008	90.0	0.006
1.8	0.883	10.0	0.050	29.0	0.014	49.5	0.034	70.0	0.013		
2.0	0.822	10.2	0.035	29.5	0.027	50.0	0.034	70.5	0.018		
2.2	0.751	10.4	0.030	30.0	0.048	50.5	0.031	71.0	0.022		



**PREDICTED COVERAGE CONTOURS**

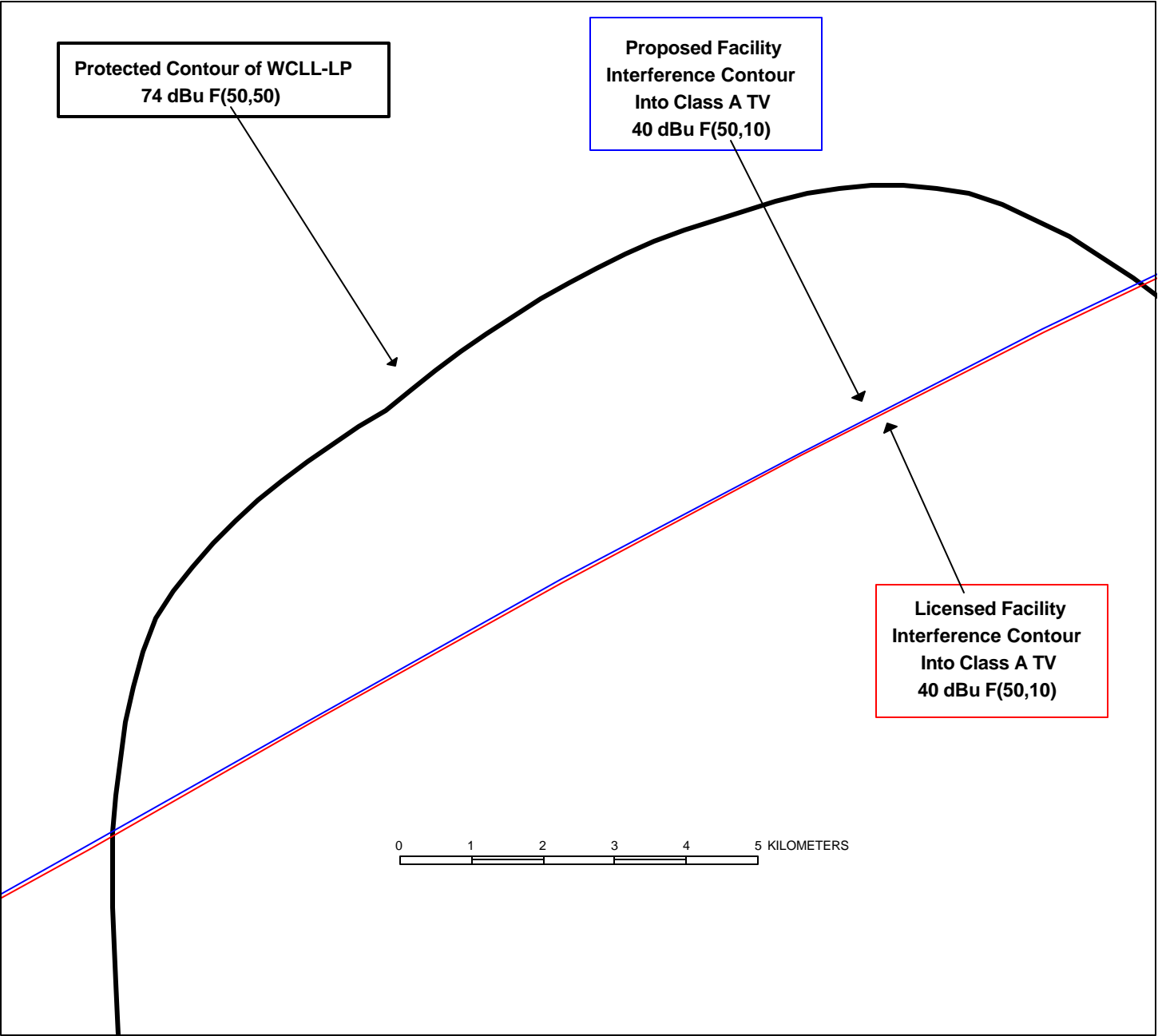
**WVAH-DT, CHARLESTON, WEST VIRGINIA  
PROPOSED FACILITY AT WVAH SITE  
CH. 19, 475.0 kW ERP, 504.5 m HAAT  
JULY, 2003**



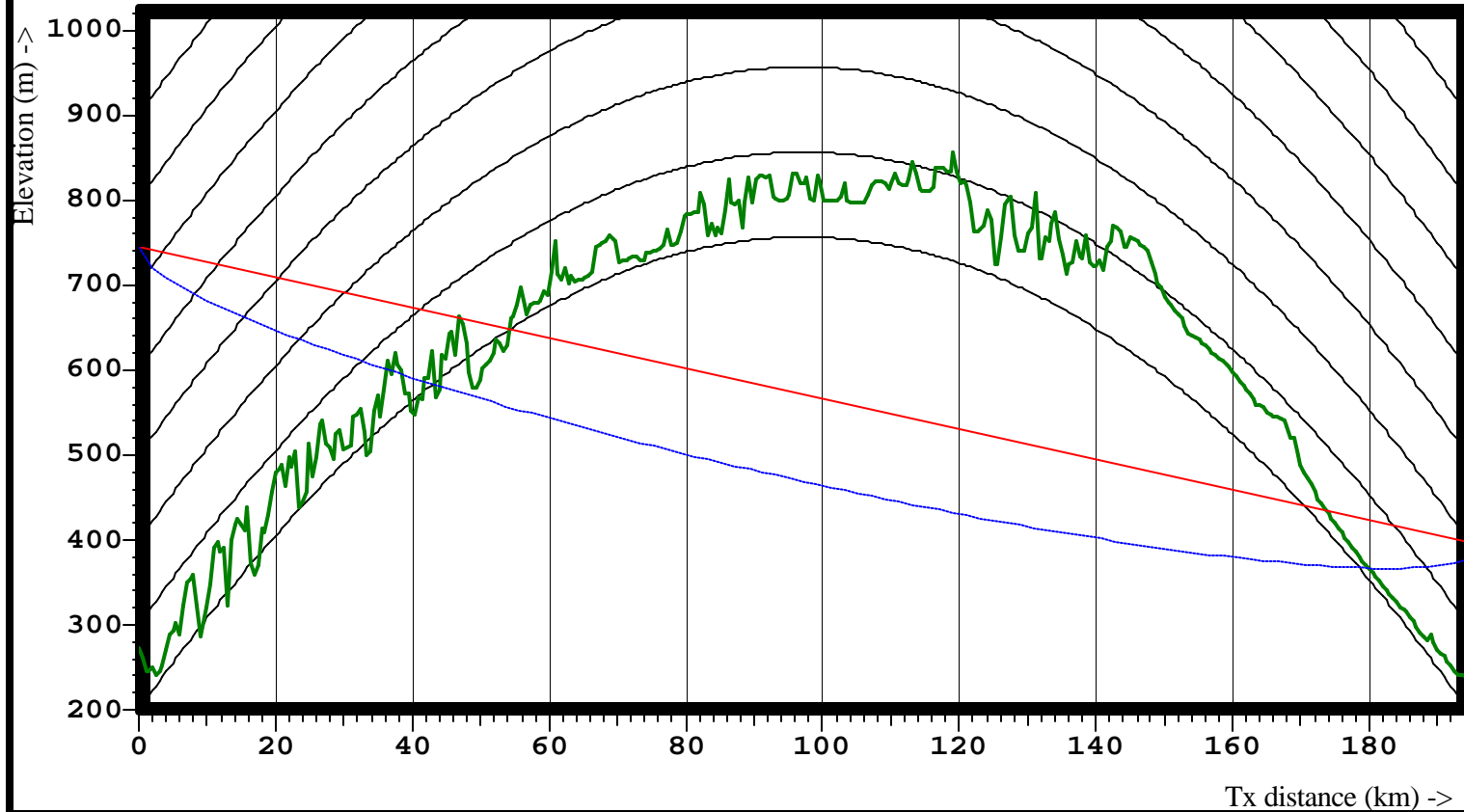
# **PREDICTED INTERFERENCE CONTOURS INTO CLASS A TELEVISION**

**WVAH-DT, CHARLESTON, WEST VIRGINIA  
PROPOSED FACILITY AT WVAH SITE  
CH. 19, 475.0 kW ERP, 504.5 m HAAT  
JULY, 2003**





**PREDICTED INTERFERENCE CONTOURS  
INTO CLASS A TELEVISION  
WVAH-DT, CHARLESTON, WEST VIRGINIA  
PROPOSED FACILITY AT WVAH SITE  
CH. 19, 475.0 kW ERP, 504.5 m HAAT  
JULY, 2003**



Prop. model: Longley-Rice v1.2.2  
 Time: 10.00 % Loc.: 50.00 %  
 Margin: 3.00 dB  
 Climate: Continental Temperate  
 Groundcover: None  
 Atm. factor: none  
 K factors: 1.333, 1.000, 1.000

#### Reliability Analysis

Fade outage method:

Vigants-Barnett

C param. for Vigants-Barnett:

average prop. conditions: C=1

Adj. chan. interf.: -100.0 dBmW

External interf.: -100.0 dBmW

Dispersive fade margin: 50.0 dB

Div. type: unprotected 50.0 dB

Ant. spacing for diversity: 10.0 dB

Rain outage method: Crane

Rain region: A

Transmitter Site: WVAH  
 Name: WVAH  
 Location:  
 N38°25'15.00" W81°55'27.00"  
 Site elevation: 296.6 m  
 Antenna height: 447.9 m  
 Pointing azimuth: 331.9 deg  
 Transmitter power: 30.00 dBm  
 Trans. line loss: 0.00 dB  
 Other losses: 0.00 dB  
 Antenna gain: 0.00 dB  
 Antenna file:  
 Total ERP: 30.00 dBm

Name: WVAH -> WCLLLP  
 Frequency: 503.0000 MHz  
 Polarization: vertical  
 Length: 194.91 km  
 Number of obstacles: 0  
 Excess path loss: 55.1 dB  
 Atm. absorption loss: 0.0 dB  
 Path loss for stats: 187.34 dB  
 Flat fade margin: -187.34 dB  
 Total fade margin: -187.34 dB  
 Annual fade outage: 31536000.00 s  
 Annual rain outage: 0.00 s  
 Link availability: 0.0000 %

Receiver Site: WCLLLP  
 Name: WCLL-LP  
 Location:  
 N39°57'44.00" W83°00'08.00"  
 Site elevation: 229.7 m  
 Antenna height: 168.3 m  
 Pointing azimuth: 151.9 deg  
 Receiver threshold: 30.00 dBm  
 Trans. line loss: 0.00 dB  
 Other losses: 0.00 dB  
 Antenna gain: 0.00 dB  
 Antenna file:  
 Received signal level: -157.34 dBm

#### Notes

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WVAH-DT, CHARLESTON, WEST VIRGINIA  
CHANNEL 19, 475.0 kW ERP, 504.5 m HAAT  
JULY, 2003

<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>
WCHS-DT	DT	41	635	H	445.9	500.000	0.300	0.01571	0.423	3.58%
WVAH-DT	DT	19	503	H	445.9	475.000	0.300	0.00718	0.335	2.14%
WCHS-TV	TV	8	183	H	464	52.700	0.300	0.00037	0.200	0.18%
WVAH-TV	TV	11	201	H	455.4	56.200	0.300	0.00041	0.200	0.20%
WKLC-FM	FM	286	105.1	H & V	442	3.600	1.000	0.00123	0.200	0.62%

**TOTAL PERCENTAGE OF ANSI VALUE= 6.72%**

*\*\* 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.*