

## **EXHIBIT**

### **2ND ADJACENT CHANNEL INTERFERENCE WAIVER REQUEST**

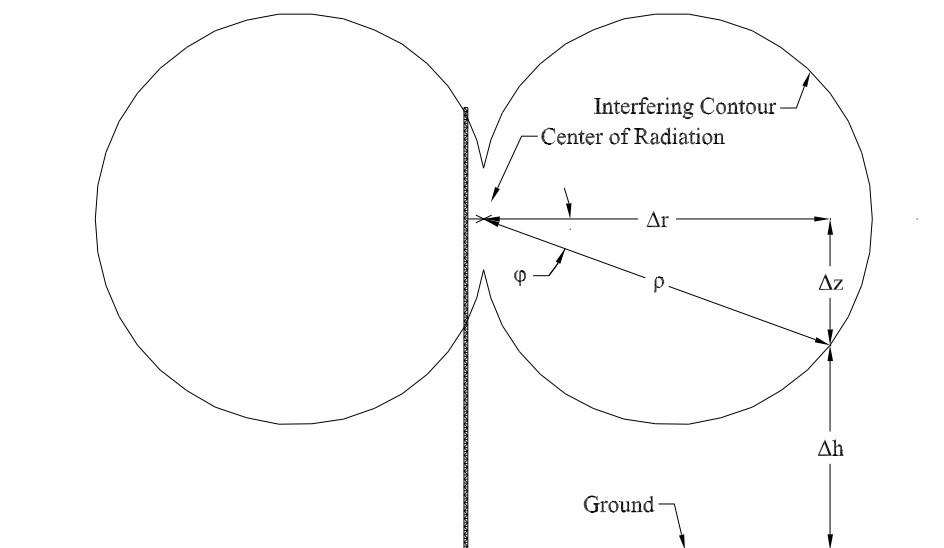
The proposed facilities are not compliant with the 2nd adjacent channel spacing requirements of section §73.807(a)(1) in relation to at least one full-power FM facility, application or construction permit. As is shown by the analyses presented within this exhibit, no population is located within any region of interference caused by the proposed facilities to the existing stations either because the region does not extend far enough radially to encounter a populated area, exists entirely sufficiently above the ground to avoid populated areas, or a combination of both. Since no population will be subjected to interference, a waiver of the §73.807(a)(1) 2nd adjacent channel spacing requirements is requested.

## INTERFERENCE DETERMINATION PROCEDURE

The following procedure was used to predict the region of interference caused to any existing 2nd adjacent station by the proposed facilities:

1. The distance and bearing from the existing transmitter to the proposed transmitter was determined.
2. The height above average terrain of the existing station's antenna in the direction of the proposed transmitter was determined.
3. The F(50,50) curves were used to determine the existing station's protected field strength at the proposed transmitter site.
4. A 40 dB protection factor was added to the existing station's protected field to determine the maximum allowed proposed facilities' interfering field on a second adjacent channel.
5. For a particular elevation angle,  $\phi$ , the proposed facilities' maximum ERP (100.0 W) was scaled by the square of the antenna voltage gain to determine the ERP at this angle. Antenna voltage gain versus elevation angle was taken from the manufacturer data sheet (attached) for a single-bay antenna system.
6. The free-space equation was used to determine the distance,  $\rho$ , from the proposed facilities' center of radiation to the maximum allowed interfering field contour at this elevation angle.
7. Radial displacement from the center of radiation,  $\Delta r$ , and vertical displacement from the center of radiation,  $\Delta z$ , were computed.
8. Height of this contour point above ground,  $\Delta h$ , was computed by subtracting  $\Delta z$  from 42.1, the height of the proposed facilities' center of radiation above ground.
9. Steps 5 through 8 were repeated for the complete range of elevation angles, tabulated, and plotted on an elevation diagram.

The following figure depicts the procedure for producing an elevation diagram.



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
 File Number.....BSTA-20130328AJL  
 Record Type.....APP  
 Community of License.....BALTIMORE, MD  
 Latitude (NAD27).....39-20-18 N  
 Longitude (NAD27).....076-40-00 W  
 Channel.....222B  
 Effective Radiated Power.....5.000 kW  
 Antenna Height above Average Terrain.....174 m

### Analysis

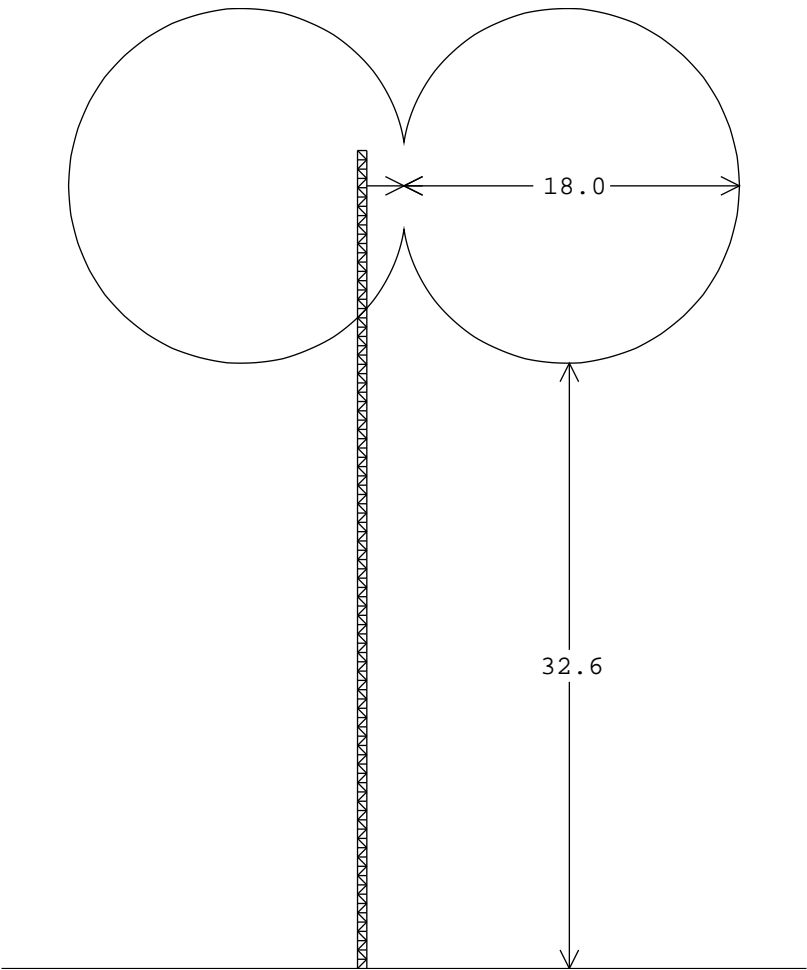
Azimuth from WERQ-FM Transmitter to Proposed Transmitter.....173°  
 WERQ-FM HAAT in direction of Proposed Transmitter.....237.7 m  
 WERQ-FM ERP in direction of Proposed Transmitter.....5.00 kW  
 Distance from WERQ-FM Transmitter to Proposed Transmitter.....6.62 km  
 WERQ-FM F(50,50) Protected Field at Proposed Transmitter.....91.79 dB $\mu$   
 Protection Ratio.....40.00 dB  
 Interfering Contour of Proposed Transmitter.....131.79 dB $\mu$

Elevation Angle [deg]	Antenna Voltage Gain	Effective Radiated Power [W]	Field [dB $\mu$ ]	$\rho$ [m]	$\Delta x$ [m]	$\Delta z$ [m]	$\Delta h$ [m]
0	1.000	100.0	131.79	18.0	18.0	0.0	42.1
-5	0.997	99.4	131.79	18.0	17.9	1.6	40.5
-10	0.987	97.4	131.79	17.8	17.5	3.1	39.0
-15	0.971	94.3	131.79	17.5	16.9	4.5	37.6
-20	0.949	90.1	131.79	17.1	16.1	5.9	36.2
-25	0.919	84.5	131.79	16.6	15.0	7.0	35.1
-30	0.884	78.1	131.79	15.9	13.8	8.0	34.1
-35	0.844	71.2	131.79	15.2	12.5	8.7	33.4
-40	0.796	63.4	131.79	14.4	11.0	9.2	32.9
-45	0.746	55.7	131.79	13.5	9.5	9.5	32.6
-50	0.688	47.3	131.79	12.4	8.0	9.5	32.6
-55	0.629	39.6	131.79	11.3	6.5	9.3	32.8
-60	0.562	31.6	131.79	10.1	5.1	8.8	33.3
-65	0.497	24.7	131.79	9.0	3.8	8.1	34.0
-70	0.425	18.1	131.79	7.7	2.6	7.2	34.9
-75	0.354	12.5	131.79	6.4	1.7	6.2	35.9
-80	0.278	7.7	131.79	5.0	0.9	4.9	37.2
-85	0.204	4.2	131.79	3.7	0.3	3.7	38.4
-90	0.130	1.7	131.79	2.3	0.0	2.3	39.8

INTERFERENCE CAUSED TO WERQ-FM

Protected Station Details

Callsign.....WERQ-FM  
File Number.....BSTA-20130328AJL  
Record Type.....APP  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-18 N  
Longitude (NAD27).....076-40-00 W  
Channel.....222B  
Effective Radiated Power.....5.000 kW  
Antenna Height above Average Terrain.....174 m



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
File Number.....BSTA-20130328AJL  
Record Type.....APP  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-18 N  
Longitude (NAD27).....076-40-00 W  
Channel.....222B  
Effective Radiated Power.....5.000 kW  
Antenna Height above Average Terrain.....174 m



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
 File Number.....BPH-20130404ABN  
 Record Type.....CP  
 Community of License.....BALTIMORE, MD  
 Latitude (NAD27).....39-20-18 N  
 Longitude (NAD27).....076-40-00 W  
 Channel.....222B  
 Effective Radiated Power.....37.000 kW  
 Antenna Height above Average Terrain.....173 m

### Analysis

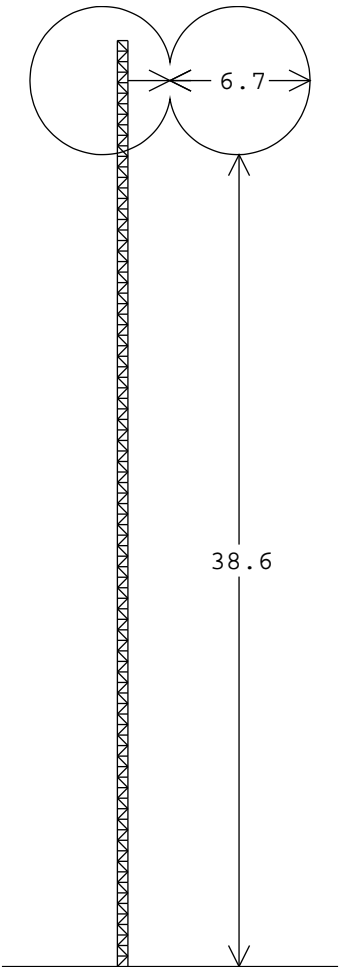
Azimuth from WERQ-FM Transmitter to Proposed Transmitter.....173°  
 WERQ-FM HAAT in direction of Proposed Transmitter.....236.7 m  
 WERQ-FM ERP in direction of Proposed Transmitter.....37.00 kW  
 Distance from WERQ-FM Transmitter to Proposed Transmitter.....6.62 km  
 WERQ-FM F(50,50) Protected Field at Proposed Transmitter.....100.46 dB $\mu$   
 Protection Ratio.....40.00 dB  
 Interfering Contour of Proposed Transmitter.....140.46 dB $\mu$

Elevation Angle [deg]	Antenna Voltage Gain	Effective Radiated Power [W]	Field [dB $\mu$ ]	$\rho$ [m]	$\Delta x$ [m]	$\Delta z$ [m]	$\Delta h$ [m]
0	1.000	100.0	140.46	6.7	6.7	0.0	42.1
-5	0.997	99.4	140.46	6.6	6.6	0.6	41.5
-10	0.987	97.4	140.46	6.6	6.5	1.1	41.0
-15	0.971	94.3	140.46	6.5	6.2	1.7	40.4
-20	0.949	90.1	140.46	6.3	5.9	2.2	39.9
-25	0.919	84.5	140.46	6.1	5.5	2.6	39.5
-30	0.884	78.1	140.46	5.9	5.1	2.9	39.2
-35	0.844	71.2	140.46	5.6	4.6	3.2	38.9
-40	0.796	63.4	140.46	5.3	4.1	3.4	38.7
-45	0.746	55.7	140.46	5.0	3.5	3.5	38.6
-50	0.688	47.3	140.46	4.6	2.9	3.5	38.6
-55	0.629	39.6	140.46	4.2	2.4	3.4	38.7
-60	0.562	31.6	140.46	3.7	1.9	3.2	38.9
-65	0.497	24.7	140.46	3.3	1.4	3.0	39.1
-70	0.425	18.1	140.46	2.8	1.0	2.7	39.4
-75	0.354	12.5	140.46	2.4	0.6	2.3	39.8
-80	0.278	7.7	140.46	1.9	0.3	1.8	40.3
-85	0.204	4.2	140.46	1.4	0.1	1.4	40.7
-90	0.130	1.7	140.46	0.9	0.0	0.9	41.2

INTERFERENCE CAUSED TO WERQ-FM

Protected Station Details

Callsign.....WERQ-FM  
File Number.....BPH-20130404ABN  
Record Type.....CP  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-18 N  
Longitude (NAD27).....076-40-00 W  
Channel.....222B  
Effective Radiated Power.....37.000 kW  
Antenna Height above Average Terrain.....173 m



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
File Number.....BPH-20130404ABN  
Record Type.....CP  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-18 N  
Longitude (NAD27).....076-40-00 W  
Channel.....222B  
Effective Radiated Power.....37.000 kW  
Antenna Height above Average Terrain.....173 m





## INTERFERENCE CAUSED TO WPOC

### Protected Station Details

Callsign.....WPOC  
 File Number.....BLH-20000714ABE  
 Record Type.....LIC  
 Community of License.....BALTIMORE, MD  
 Latitude (NAD27).....39-17-13 N  
 Longitude (NAD27).....076-45-16 W  
 Channel.....226B  
 Effective Radiated Power.....16.000 kW  
 Antenna Height above Average Terrain.....264 m

### Analysis

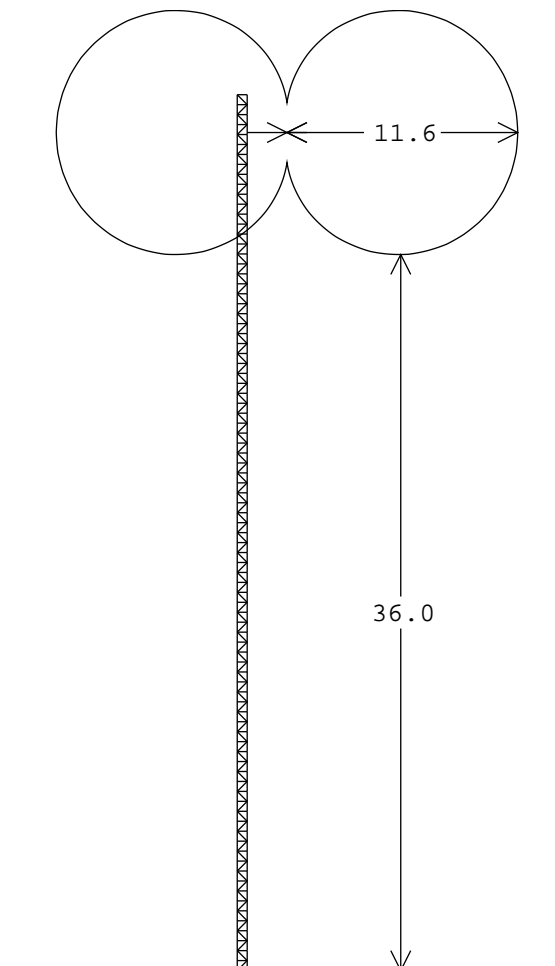
Azimuth from WPOC Transmitter to Proposed Transmitter.....96°  
 WPOC HAAT in direction of Proposed Transmitter.....334.4 m  
 WPOC ERP in direction of Proposed Transmitter.....16.00 kW  
 Distance from WPOC Transmitter to Proposed Transmitter.....8.46 km  
 WPOC F(50,50) Protected Field at Proposed Transmitter.....95.64 dB $\mu$   
 Protection Ratio.....40.00 dB  
 Interfering Contour of Proposed Transmitter.....135.64 dB $\mu$

Elevation Angle [deg]	Antenna Voltage Gain	Effective Radiated Power [W]	Field [dB $\mu$ ]	$\rho$ [m]	$\Delta x$ [m]	$\Delta z$ [m]	$\Delta h$ [m]
0	1.000	100.0	135.64	11.6	11.6	0.0	42.1
-5	0.997	99.4	135.64	11.6	11.5	1.0	41.1
-10	0.987	97.4	135.64	11.4	11.3	2.0	40.1
-15	0.971	94.3	135.64	11.3	10.9	2.9	39.2
-20	0.949	90.1	135.64	11.0	10.3	3.8	38.3
-25	0.919	84.5	135.64	10.7	9.7	4.5	37.6
-30	0.884	78.1	135.64	10.2	8.9	5.1	37.0
-35	0.844	71.2	135.64	9.8	8.0	5.6	36.5
-40	0.796	63.4	135.64	9.2	7.1	5.9	36.2
-45	0.746	55.7	135.64	8.6	6.1	6.1	36.0
-50	0.688	47.3	135.64	8.0	5.1	6.1	36.0
-55	0.629	39.6	135.64	7.3	4.2	6.0	36.1
-60	0.562	31.6	135.64	6.5	3.3	5.6	36.5
-65	0.497	24.7	135.64	5.8	2.4	5.2	36.9
-70	0.425	18.1	135.64	4.9	1.7	4.6	37.5
-75	0.354	12.5	135.64	4.1	1.1	4.0	38.1
-80	0.278	7.7	135.64	3.2	0.6	3.2	38.9
-85	0.204	4.2	135.64	2.4	0.2	2.4	39.7
-90	0.130	1.7	135.64	1.5	0.0	1.5	40.6

# INTERFERENCE CAUSED TO WPOC

## Protected Station Details

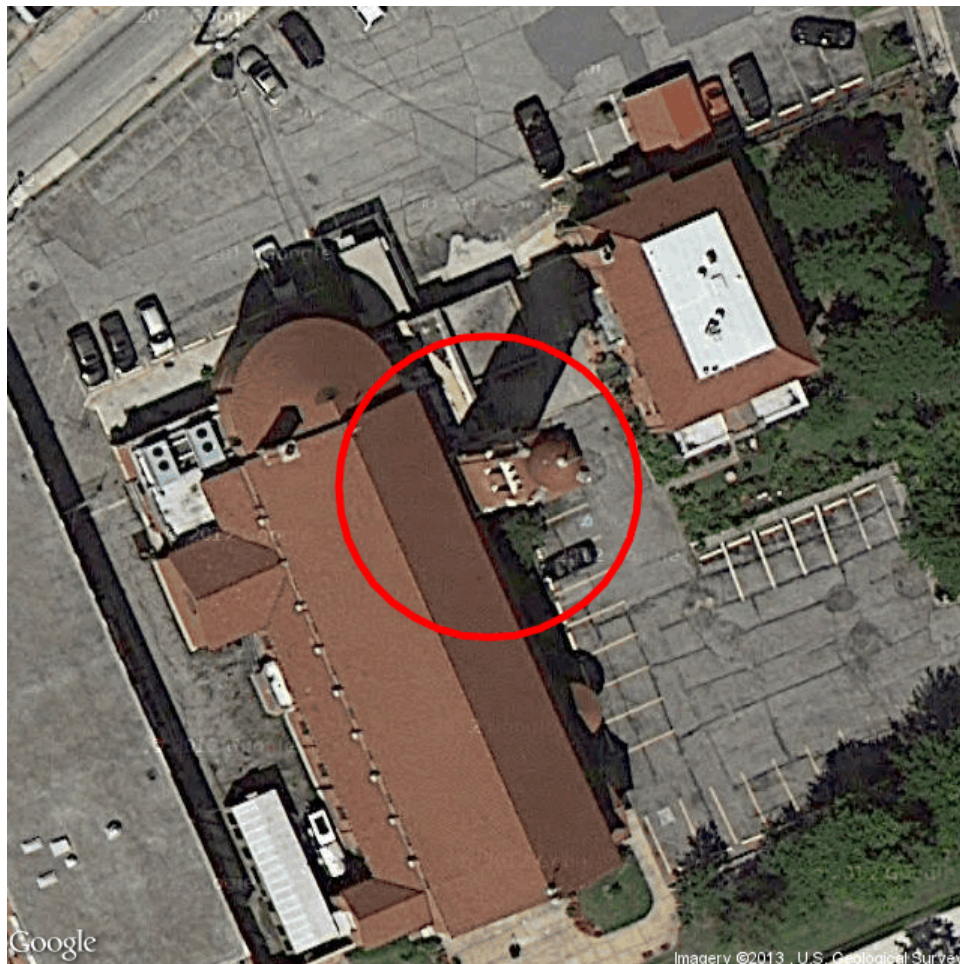
Callsign.....WPOC  
File Number.....BLH-20000714ABE  
Record Type.....LIC  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-17-13 N  
Longitude (NAD27).....076-45-16 W  
Channel.....226B  
Effective Radiated Power.....16.000 kW  
Antenna Height above Average Terrain.....264 m



## INTERFERENCE CAUSED TO WPOC

### Protected Station Details

Callsign.....WPOC  
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Longitude (NAD27).....076-45-16 W  
Channel.....226B  
Effective Radiated Power.....16.000 kW  
Antenna Height above Average Terrain.....264 m



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
 File Number.....BLH-19891228KA  
 Record Type.....LIC  
 Community of License.....BALTIMORE, MD  
 Latitude (NAD27).....39-20-20 N  
 Longitude (NAD27).....076-40-02 W  
 Channel.....222B  
 Effective Radiated Power.....37.000 kW  
 Antenna Height above Average Terrain.....174 m

### Analysis

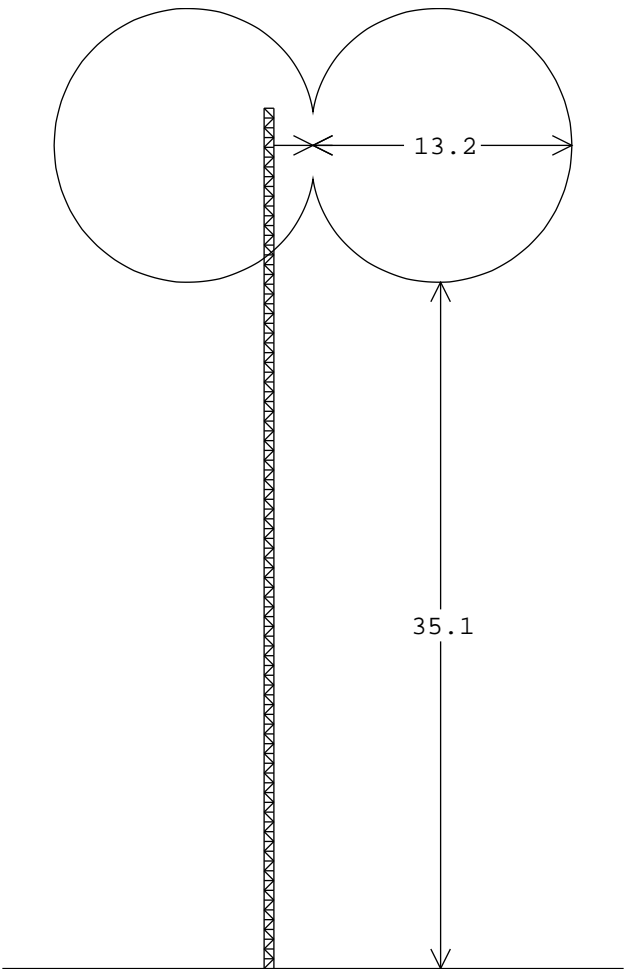
Azimuth from WERQ-FM Transmitter to Proposed Transmitter.....172°  
 WERQ-FM HAAT in direction of Proposed Transmitter.....237.6 m  
 WERQ-FM ERP in direction of Proposed Transmitter.....9.62 kW  
 Distance from WERQ-FM Transmitter to Proposed Transmitter.....6.69 km  
 WERQ-FM F(50,50) Protected Field at Proposed Transmitter.....94.48 dB $\mu$   
 Protection Ratio.....40.00 dB  
 Interfering Contour of Proposed Transmitter.....134.48 dB $\mu$

Elevation Angle [deg]	Antenna Voltage Gain	Effective Radiated Power [W]	Field [dB $\mu$ ]	$\rho$ [m]	$\Delta x$ [m]	$\Delta z$ [m]	$\Delta h$ [m]
0	1.000	100.0	134.48	13.2	13.2	0.0	42.1
-5	0.997	99.4	134.48	13.2	13.1	1.2	40.9
-10	0.987	97.4	134.48	13.1	12.9	2.3	39.8
-15	0.971	94.3	134.48	12.9	12.4	3.3	38.8
-20	0.949	90.1	134.48	12.6	11.8	4.3	37.8
-25	0.919	84.5	134.48	12.2	11.0	5.1	37.0
-30	0.884	78.1	134.48	11.7	10.1	5.9	36.2
-35	0.844	71.2	134.48	11.2	9.2	6.4	35.7
-40	0.796	63.4	134.48	10.5	8.1	6.8	35.3
-45	0.746	55.7	134.48	9.9	7.0	7.0	35.1
-50	0.688	47.3	134.48	9.1	5.9	7.0	35.1
-55	0.629	39.6	134.48	8.3	4.8	6.8	35.3
-60	0.562	31.6	134.48	7.4	3.7	6.4	35.7
-65	0.497	24.7	134.48	6.6	2.8	6.0	36.1
-70	0.425	18.1	134.48	5.6	1.9	5.3	36.8
-75	0.354	12.5	134.48	4.7	1.2	4.5	37.6
-80	0.278	7.7	134.48	3.7	0.6	3.6	38.5
-85	0.204	4.2	134.48	2.7	0.2	2.7	39.4
-90	0.130	1.7	134.48	1.7	0.0	1.7	40.4

INTERFERENCE CAUSED TO WERQ-FM

Protected Station Details

Callsign.....WERQ-FM  
File Number.....BLH-19891228KA  
Record Type.....LIC  
Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-20 N  
Longitude (NAD27).....076-40-02 W  
Channel.....222B  
Effective Radiated Power.....37.000 kW  
Antenna Height above Average Terrain.....174 m



## INTERFERENCE CAUSED TO WERQ-FM

### Protected Station Details

Callsign.....WERQ-FM  
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Community of License.....BALTIMORE, MD  
Latitude (NAD27).....39-20-20 N  
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Channel.....222B  
Effective Radiated Power.....37.000 kW  
Antenna Height above Average Terrain.....174 m



# ANTENNA ELEVATION PATTERN

