

MODIFY BPH-20050617AAU
URBAN RADIO LICENSES, LLC
WJZE (FM) RADIO STATION
CH 247A - 97.3 MHZ - 4.3 KW (DA)
OAK HARBOR, OHIO
November 2006

EXHIBIT A

Compliance with §73.315(a)
Using Supplemental City Grade Analysis

The proposed tower site for WJZE is located 23.0 kilometers south-southwest of the community of Oak Harbor, Ohio. From the proposed WJZE facility, the predicted 3.16 mV/m contour, using the Commission's standard method of predicting city grade coverage as outlined in §73.313, does not encompass the community of Oak Harbor. However, in this particular case, we find a supplemental method of depicting city grade coverage, as noted in §73.313(e) of the Commission's rules, is appropriate. We have analyzed the terrain in 2.0° increments from 74° to 82° to determine the terrain variations on each of these radials. §73.313 of the rules notes that the Commission's propagation curves are based on a 50 meter terrain variation (ΔH). Using the 30 second terrain database, on the five pertinent radials toward the community of Oak Harbor, beginning at 10 kilometers out from the site, out beyond the community of license (a distance of 25.0 kilometers), the individual radial ΔH values never exceed 10.2 meters, with the majority of radials less than 7.0 meters. As such, the terrain along the pertinent radials varies from the 50 meter variation used in the Commission's field strength curves.

The proposed WJZE antenna system is to be located in Woodville, Ohio, at geographic coordinates North Latitude 41° 28' 19" and West Longitude 83° 25' 05. The community of Oak

Harbor, Ohio, is located on bearings between 74° and 82° true from the proposed WJZE site. Running individual radials, in 2° increments, from the WJZE site through the community, we have determined the location of the city grade contour based on the standard utilization of the Commission's 50/50 curves (see Exhibit A1). We have alternatively determined the location of the 70 dBu coverage, using the Diffcomb program (Version 7B), which is a variation of the irregular terrain model, taking into consideration diffraction loss over knife edge and rounded obstacle obstructions. Further, reductions of calculation signal strength are also made to account for foliage and buildings (Clutter Loss).¹ This model is a more representative prediction of field strength than the standard methodology under certain terrain conditions.²

On the pertinent bearings toward the community of Oak Harbor, we have tabulated the distance to the city grade contour using both the FCC method and supplemental method to demonstrate the differences to the contour and find that the supplemental depiction distances are in excess of 10% higher than the distances using the Commission's standard methodology (see Exhibit A2). Based on the Staff's policy, we find that the terrain on these pertinent radials varies widely from the 3.0 to 16.0 kilometer average (as detailed above) and the differences to the contour distances, as determined by the supplemental method, exceed the standard method by more than 10%. Therefore, pursuant to §73.313(e), a supplemental method of depicting the city grade coverage is acceptable. It is noted that at no point does the supplemental city grade distance extend beyond the predicted 60 dBu (50/50) protected contour.³

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- 1) To insure coverage of the proposed community, the Diffcomb model was set at 29.0 kilometers as the point of interest.
 - 2) While WJZE proposes a directional antenna system, the station is at full power, 3.8 kilowatts, in the critical azimuths toward the community of license.
 - 3) If the Diffcomb contour extended beyond the predicted 60 dBu contour, it was truncated at that distance.

Using the supplemental method calculations, we find that the city grade contour in the direction of Oak Harbor, Ohio, in 2° increments between 74° and 82°, extends at least 26.0 kilometers out from the site, on the pertinent radials, extending beyond the community of Oak Harbor. As visually demonstrated on Exhibit A3, the predicted 70 dBu signal, as calculated using the Diffcomb model, shows Oak Harbor, Ohio, within the predicted city grade contour. There are no terrain obstructions in the path between the proposed transmitter site and the community. Attached as Exhibit A4 through A8 are the terrain profiles of the 74°, 76°, 78°, 80° and 82° radials.

A sample calculation was made, based on the 80° radial, between the site and the community, to verify the location of the city grade, using a free space signal formula: $106.9 + \text{power in dBk} - 20 \log (\text{distance in kilometers to point of interest})$. Based on the proposed WJZE facility, the distance to the 70 dBu contour was calculated using the Diffcomb program and found to extend 26.0 kilometers. Based on the proposed facility, the 70 dBu contour, corrected to allow for a 5.0 dB clutter loss (the 75 dBu contour), is being sought.

$$106.9 + 6.33 \text{ dBk} - 20 \log 26 = 84.9$$

Attenuation due to diffracted signal over terrain - 9.9 dB

Clutter Loss -5.0

Signal at point of interests 70.0 dBu

Therefore, based on the supplemental depiction, we find the community of Oak Harbor to be within the city grade contour of the proposed WJZE facility in compliance with the Commission's rules.

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EXHIBIT A1

Predicted contour:

N. Lat. = 41 28 19 - Tabulated City Grade and Protected Contour Data
W. Lng. = 83 25 05 - WJZE Radio Station - Oak Harbor, Ohio

HAAT and Distance to Contour - FCC Method - NGDC 30 Second terrain database
Azi. HAAT ERP kW dBk Field 70-F5 60-F5

000	124.4	4.3000	6.33	1.000	16.63	28.88
045	125.6	4.3000	6.33	1.000	16.72	29.00
090	123.7	4.3000	6.33	1.000	16.59	28.82
135	114.0	4.3000	6.33	1.000	15.86	27.87
180	110.5	3.7995	5.80	0.940	15.06	26.74
225	112.4	0.6880	-1.62	0.400	9.96	17.95
270	112.4	0.4683	-3.30	0.330	9.06	16.12
315	122.0	2.1070	3.24	0.700	13.58	24.45

Ave El= 189.29 M HAAT= 118.11 M AMSL= 307.4 M

Additional Radials (Not Considered in Average):

074	124.4	4.3000	6.33	1.000	16.64	28.89
076	124.4	4.3000	6.33	1.000	16.64	28.89
078	124.4	4.3000	6.33	1.000	16.64	28.89
080	124.4	4.3000	6.33	1.000	16.64	28.89
082	124.4	4.3000	6.33	1.000	16.64	28.89

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EXHIBIT A2

Tabulation of City Grade Contours
in Arc Towards Oak Harbor, Ohio

<u>Radial</u> <u>(Bearing)</u>	<u>Delta</u> <u>H</u>	<u>Location of 70 dBu</u>		<u>% of Chg</u>	<u>Method</u> <u>Used</u>
		<u>FCC Method (F)</u>	<u>Diffcomb(D)</u>		
74°	6.0	16.6 km	28.0 km	+ 68.7	D
76°	6.0	16.6 km	28.0 km	+ 68.7	D
78°	6.0	16.6 km	28.0 km	+ 68.7	D
80°	6.0	16.6 km	26.0 km	+ 56.6	D
82°	10.2	16.6 km	26.0 km	+ 56.6	D

Graham Brock, Inc. - Broadcast Technical Consultants

WJZE

Latitude: 41-28-19 N
Longitude: 083-25-05 W
ERP: 4.30 kW
Channel: 247A
Frequency: 97.3 MHz
AMSL Height: 307.4 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model : FCC/P-to-P

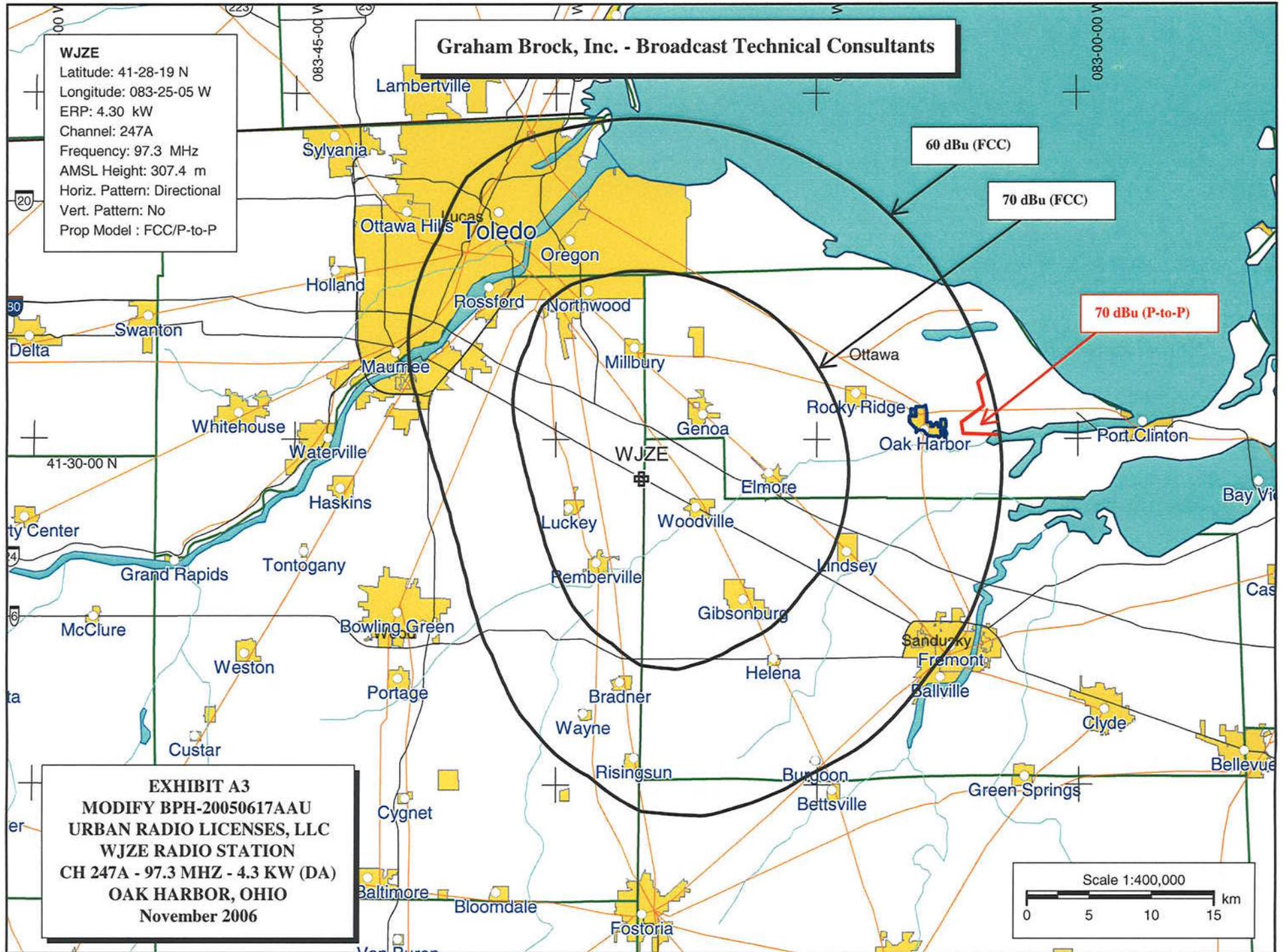
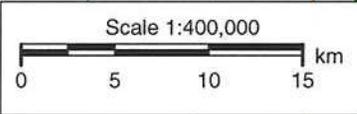
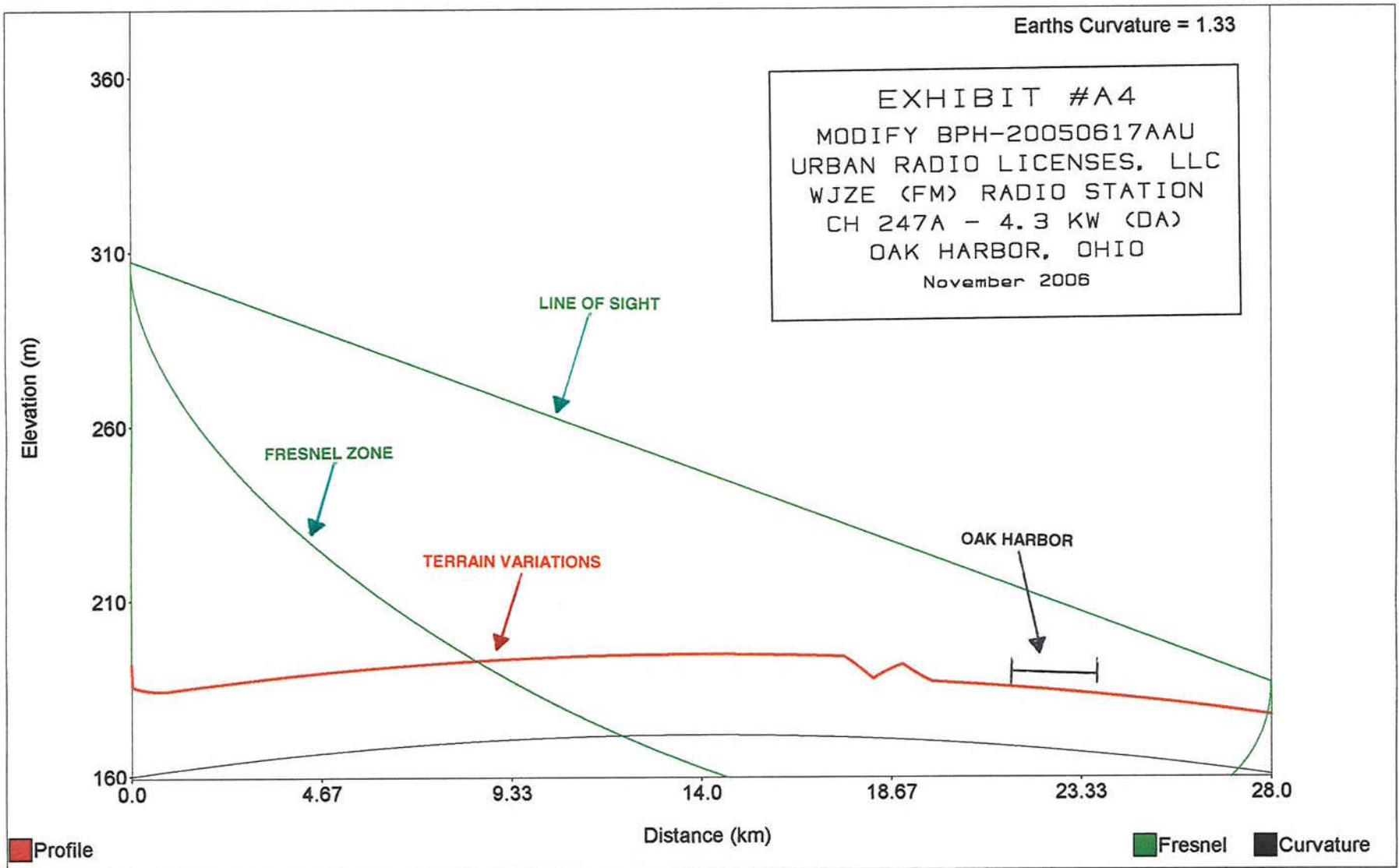


EXHIBIT A3
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Terrain path profile - WJZE Radio - 74° radial



Starting Latitude: 41-28-19 N
 Starting Longitude: 083-25-05 W

End Latitude: 41-32-27.54 N
 End Longitude: 083-05-43.82 W

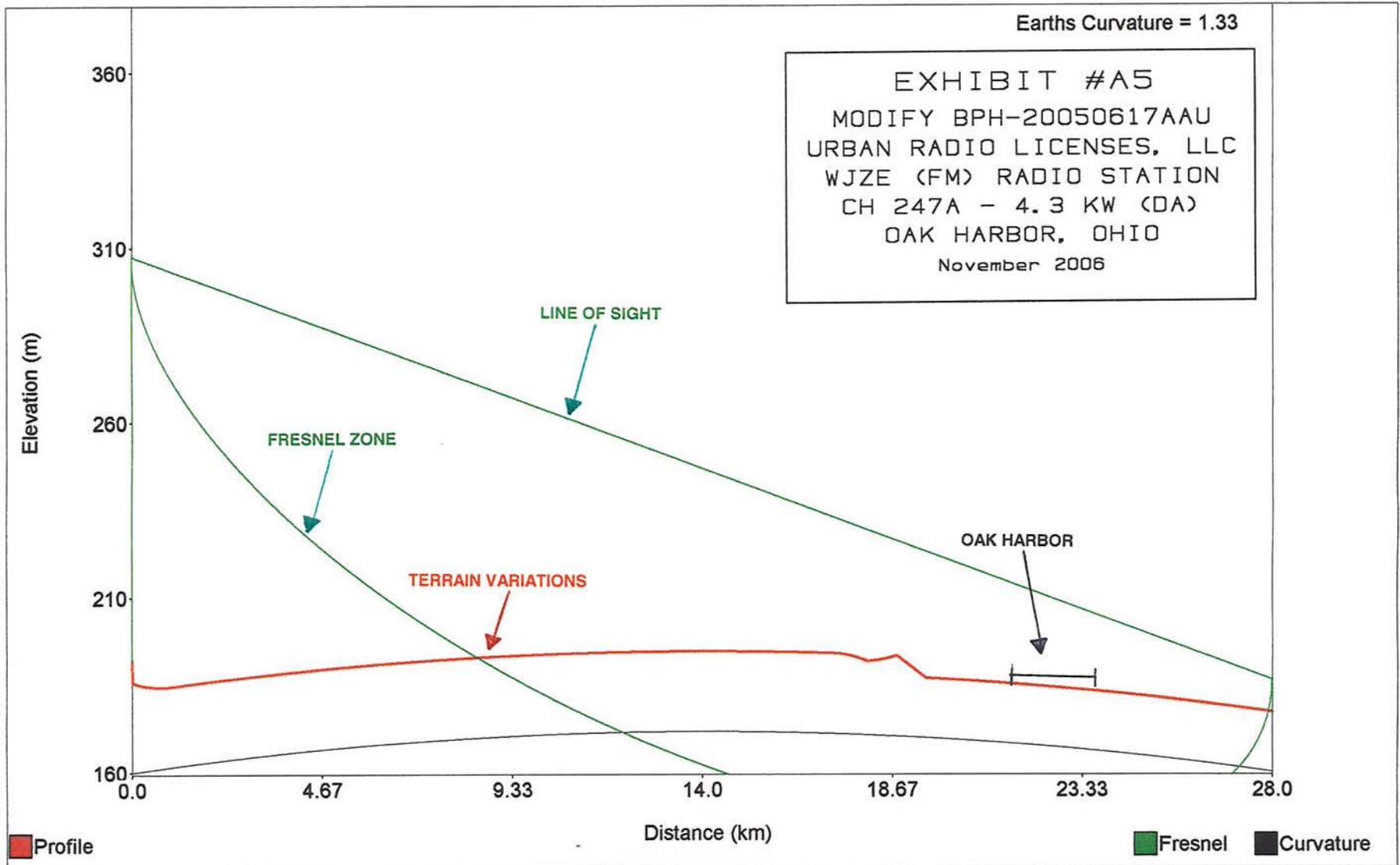
Distance: 28 km
 Bearing: 74 deg

Transmitter Height (AG) = 115.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 192.0 m
 Receiver Elevation = 177.0 m

Frequency = 97.3 MHz
 Fresnel Zone: 0.6

Terrain path profile - WJZE Radio - 76° radial



Starting Latitude: 41-28-19 N
 Starting Longitude: 083-25-05 W

End Latitude: 41-31-56.91 N
 End Longitude: 083-05-33.06 W

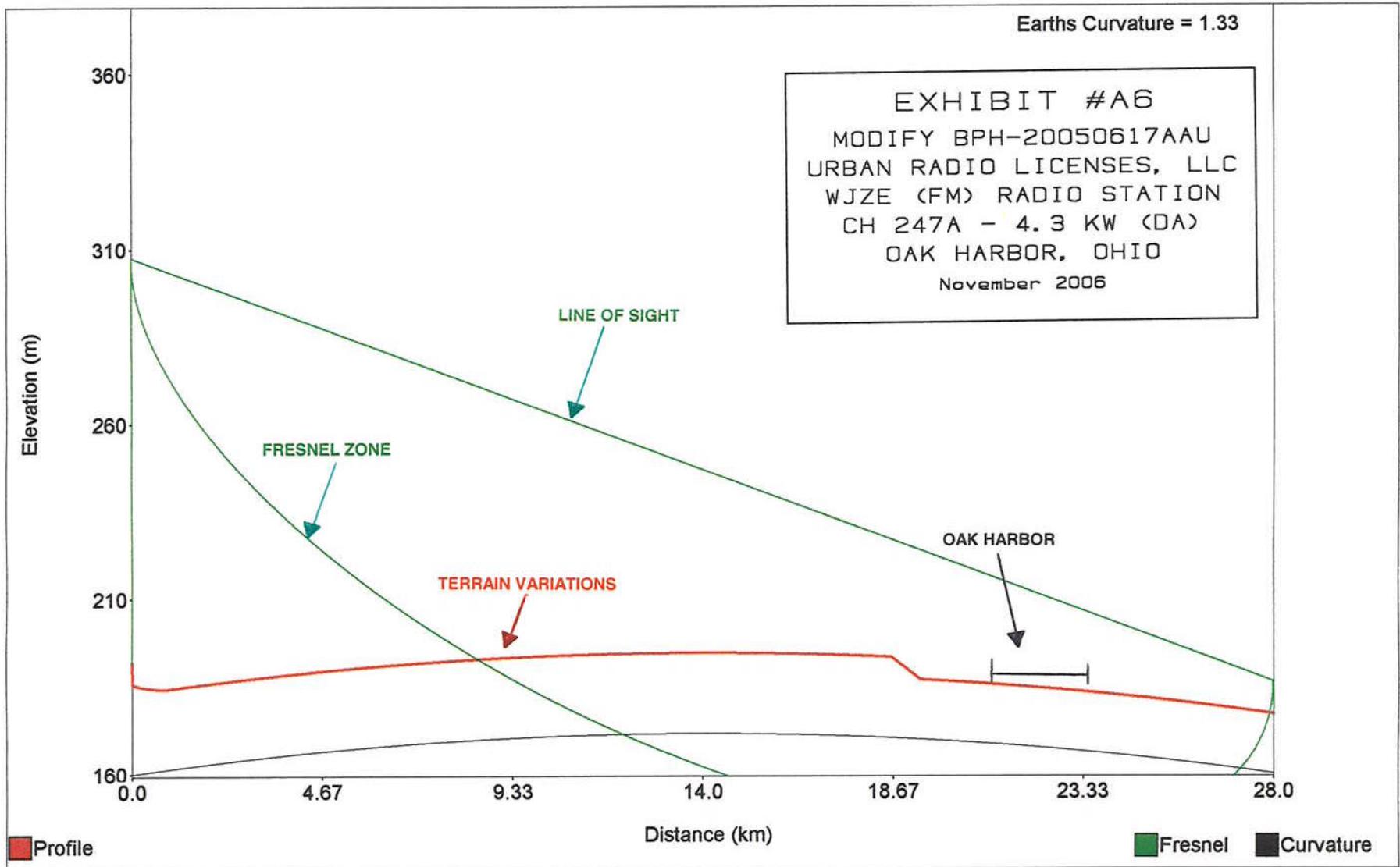
Distance: 28 km
 Bearing: 76 deg

Transmitter Height (AG) = 115.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 192.0 m
 Receiver Elevation = 177.0 m

Frequency = 97.3 MHz
 Fresnel Zone: 0.6

Terrain path profile - WJZE Radio - 78° radial



Starting Latitude: 41-28-19 N
 Starting Longitude: 083-25-05 W

End Latitude: 41-31-26.02 N
 End Longitude: 083-05-23.73 W

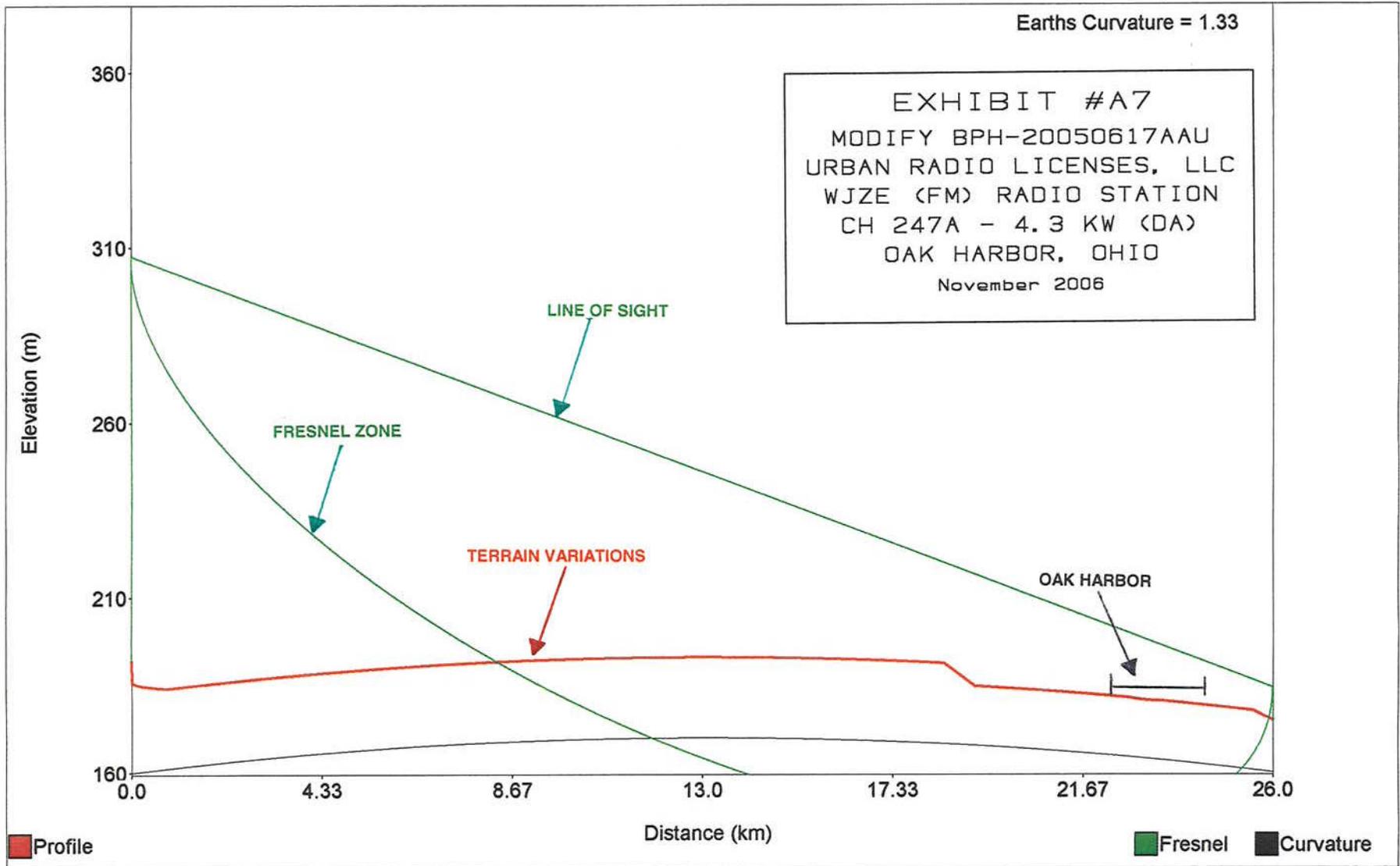
Distance: 28 km
 Bearing: 78 deg

Transmitter Height (AG) = 115.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 192.0 m
 Receiver Elevation = 177.0 m

Frequency = 97.3 MHz
 Fresnel Zone: 0.6

Terrain path profile - WJZE Radio - 80° radial



Starting Latitude: 41-28-19 N
 Starting Longitude: 083-25-05 W

End Latitude: 41-30-43.87 N
 End Longitude: 083-06-40.84 W

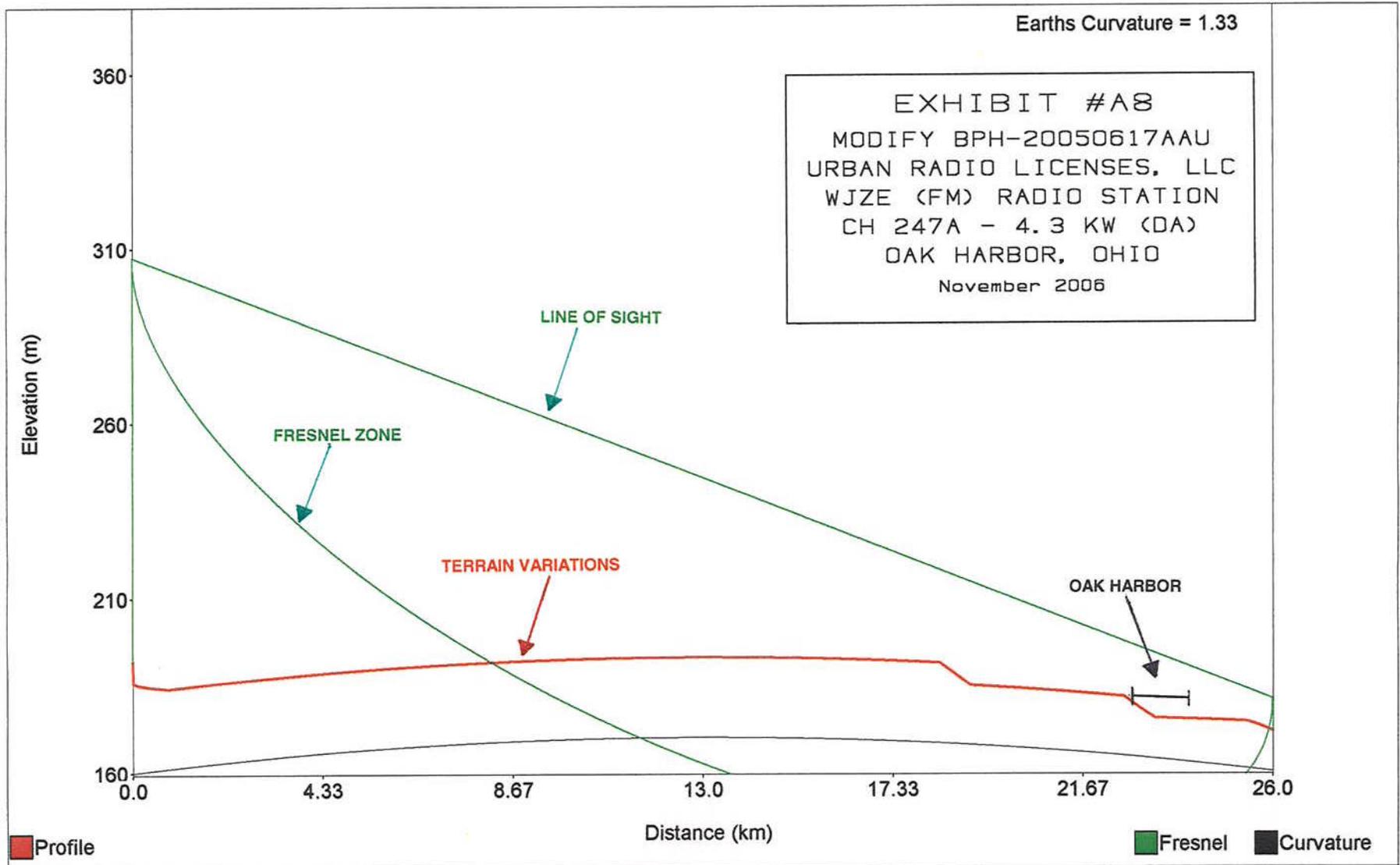
Distance: 26 km
 Bearing: 80 deg

Transmitter Height (AG) = 115.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 192.0 m
 Receiver Elevation = 175.0 m

Frequency = 97.3 MHz
 Fresnel Zone: 0.6

Terrain path profile - WJZE Radio - 82° radial



Starting Latitude: 41-28-19 N
 Starting Longitude: 083-25-05 W

End Latitude: 41-30-14.80 N
 End Longitude: 083-06-34.86 W

Distance: 26 km
 Bearing: 82 deg

Transmitter Height (AG) = 115.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 192.0 m
 Receiver Elevation = 171.5 m

Frequency = 97.3 MHz
 Fresnel Zone: 0.6