

MODIFY BPH-20060228AOO
SEA-COMM, INC.
WBNE (FM) RADIO STATION
CH 229A - 93.7 MHZ - 6.0 KW
TOPSAIL BEACH, NORTH CAROLINA
August 2006

EXHIBIT A

Using the Commission's standard method of predicting city grade coverage, as outlined in §73.313, the proposed WBNE predicted 70 dBu (3.16 mV/m) contour does not completely encompass the entire community of Topsail Beach, North Carolina. 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 between 57.0° and 69.0°, 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 50.0 meter terrain variation (ΔH). Using the 30 second terrain database on the four pertinent radials toward the community of Topsail Beach, beginning at 10.0 kilometers from the WBNE site out to a distance of 21.8 kilometers, the individual radial ΔH values do not exceed 5.4 meters. As such, the terrain along the pertinent radials varies from the 50.0 meter variation used in the Commission's field strength curves.

The proposed WBNE site is located at geographic coordinates North Latitude 34° 18' 04" and West Longitude 77° 48' 07". Topsail Beach, North Carolina is located on bearings between 57.0° and 69.0° true from the proposed WBNE site. By running individual radials in 4°

increments from the proposed WBNE site beyond the most distant portions of Topsail Beach, North Carolina, we have determined the location of the city grade contour based on the standard utilization of the Commission's 50/50 curves (Exhibit A1). We have alternatively determined the location of the 70 dBu coverage, using the Diffcomb program, which is a variation of the irregular terrain model, taking into consideration diffraction loss over knife edge and rounded obstacle obstructions. Further, reductions of calculated 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.

On the pertinent bearings toward Topsail Beach, 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 found that the supplemental depiction of distances is in excess of 10% higher than the distances using the Commission's standard methodology (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 averages (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 of WBNE.

Using the supplemental method calculations, we find that the city grade contour in the direction of the main studio in 4° increments between 57.0° and 69.0° extends a minimum of

1) To insure coverage to the studio, the Diffcomb model was set at 28.0 kilometers as the point of interest.

22.0 kilometers out from the site on the pertinent radials, extending beyond the community of Topsail. As demonstrated on Exhibit A3, the predicted 70 dBu signal, as calculated using the Diffcomb model, shows the community of license is fully encompassed by the predicted city grade contour of WBNE (Point-to-Point method). There are no major terrain obstructions in the path between the transmitter site and the main studio. Attached as Exhibit A4 is the terrain profile on the 65° radial.²

A sample calculation was made, based on the 65° radial, between the site and the community of license, to verify the location of the city grade contour, 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 WBNE facility, the distance to the 70 dBu contour was calculated using the Diffcomb program and found to extend 23.0 kilometers. Based on the proposed facility, the 70 dBu contour, corrected to allow for a 5.0 dB clutter loss (75 dBu contour), is being sought.

$$106.9 + 7.78 \text{ dBk} - 20 \log 23.0 = 87.44$$

Attenuation due to diffracted signal over terrain - 12.44 dB

Clutter Loss -5.0

Signal at point of interest 70.0 dBu

Therefore, based on the supplemental depiction, we find the proposed WBNE facility will place a 70 dBu contour over the entire community of license of Topsail Beach, North Carolina. As such, it is believed that this proposal is in compliance with §73.315(a) of the Commission's rules.

2) The remaining radials are similar and are, therefore, not included. However, the additional radial profiles are available upon request.

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EXHIBIT A1

Predicted contour:

N. Lat. = 34 18 04: Tabulated City Grade and Protected Contour Data
W. Lng. = 77 48 07: WBNE Radio Station - Topsail Beach, North Carolina

HAAT and Distance to Contour - FCC Method - NGDC 30 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5	70-F5
000	5.3	99.1	6.0000	7.78	1.000	28.17	16.07
045	10.5	93.9	6.0000	7.78	1.000	27.47	15.57
090	0.0	104.4	6.0000	7.78	1.000	28.87	16.58
135	0.0	104.4	6.0000	7.78	1.000	28.87	16.58
180	1.1	103.3	6.0000	7.78	1.000	28.72	16.48
225	5.7	98.7	6.0000	7.78	1.000	28.12	16.03
270	7.3	97.1	6.0000	7.78	1.000	27.91	15.88
315	6.4	98.0	6.0000	7.78	1.000	28.03	15.96

Ave El= 4.54 M HAAT= 99.86 M AMSL= 104.4 M

Additional Radials (Not Considered in Average):

057	4.5	99.9	1.2150	0.85	0.450	19.54	10.81
061	2.9	101.5	1.2150	0.85	0.450	19.71	10.89
065	1.7	102.7	1.2150	0.85	0.450	19.82	10.95
069	0.8	103.6	1.2150	0.85	0.450	19.92	10.99

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EXHIBIT A2

Tabulation of City Grade Contours
in Arc Toward Topsail Beach, North Carolina

<u>Radial</u> <u>(Bearing)</u>	<u>Delta H</u> <u>(19 km)</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>		
57.0°	5.4 m	10.8 km	22.0 km	+ 49.0	D
61.0°	1.2 m	10.9 km	23.0 km	+ 47.8	D
65.0°	0.0 m	11.0 km	23.0 km	+ 47.8	D
69.0°	0.0 m	11.0 km	23.0 km	+ 47.8	D

Graham Brock, Inc. - Broadcast Technical Consultants

WBNE - Proposed
Latitude: 34-18-04 N
Longitude: 077-48-07 W
ERP: 6.00 kW
Channel: 229A
Frequency: 93.7 MHz
AMSL Height: 104.4 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC/P-to-P

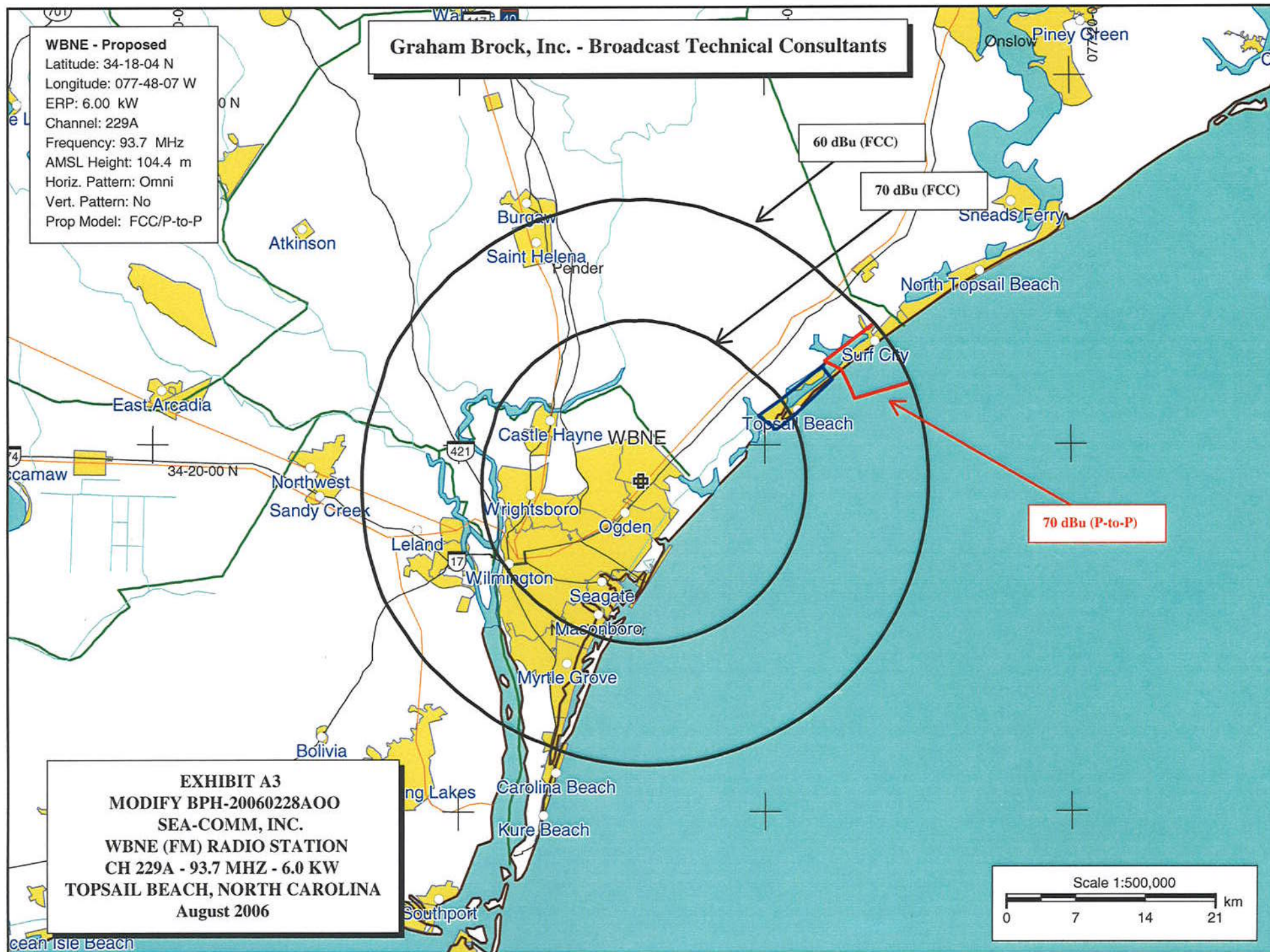
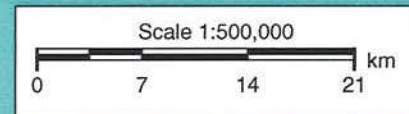
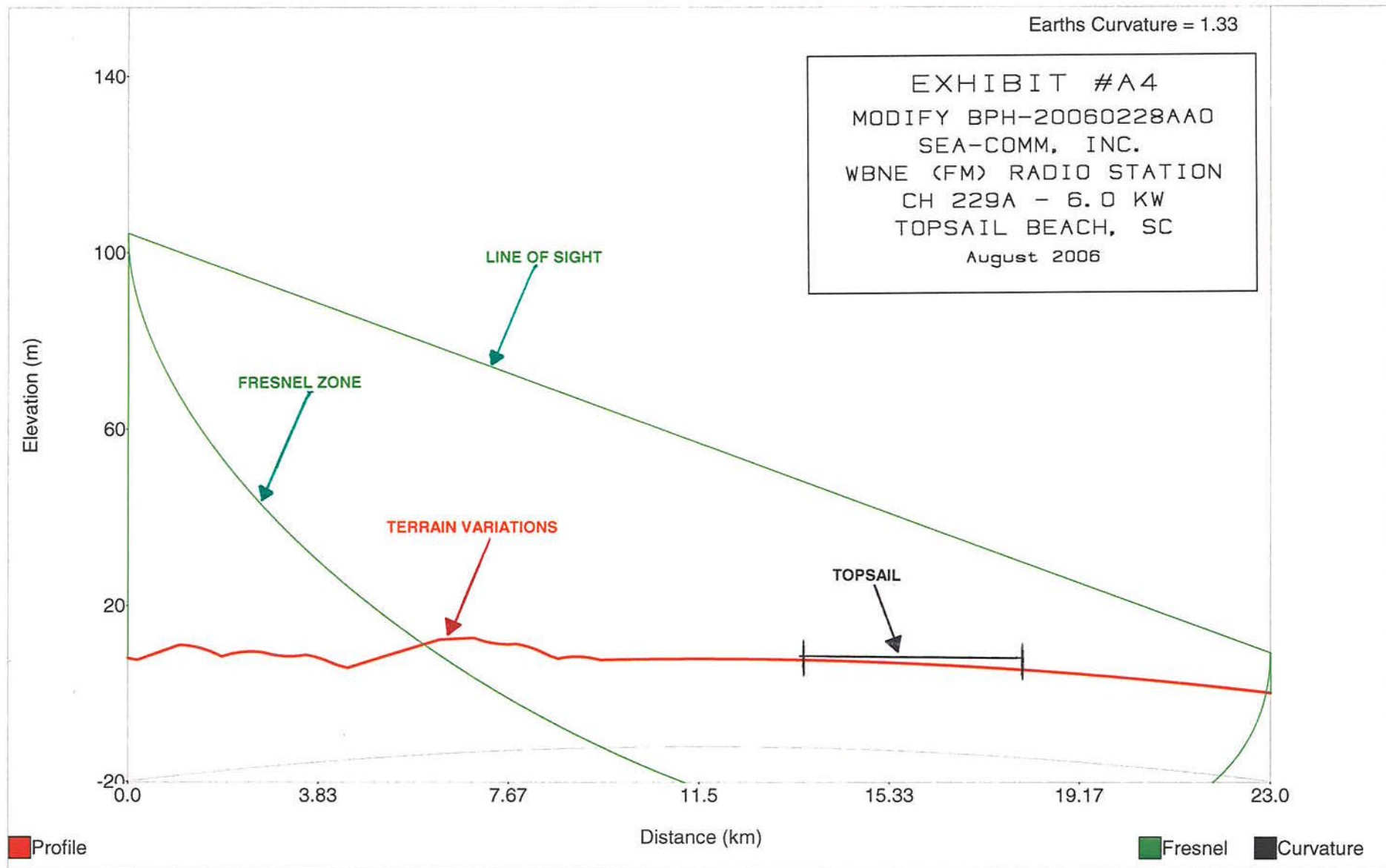


EXHIBIT A3
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TERRAIN RADIAL PROFILE - 65° RADIAL



Starting Latitude: 34-18-04 N
 Starting Longitude: 077-48-07 W

End Latitude: 34-23-18.71 N
 End Longitude: 077-34-31 W

Distance: 23 km
 Bearing: 65 deg

Transmitter Height (AG) = 96.4 m
 Receiver Height (AG) = 9.1 m

Transmitter Elevation = 8.0 m
 Receiver Elevation = 0.0 m

Frequency = 93.7 MHz
 Fresnel Zone: 0.6