

## **ENGINEERING EXHIBIT**

### **“Maximization” Application to Modify Digital Television Station Construction Permit**

prepared for

#### **Esteem Broadcasting of North Carolina LLC**

WFXI-DT Morehead City, NC

Facility ID 37982

Ch. 8 42 kW 247 m

*Esteem Broadcasting of North Carolina LLC (“Esteem”)* is the licensee of television station WFXI-TV, analog Channel 8 and digital Channel 24, Morehead City, NC. A Construction Permit (“CP”, BPCDT-20080529AJD) authorizes construction of the WFXI-DT post-transition digital facility on Channel 8, as established in Appendix B of the Seventh Report and Order in MB Docket 87-278. *Esteem* herein seeks to modify the CP to expand the WFXI-DT post-transition Channel 8 digital facility. The instant application is intended to be filed by June 20, 2008 in response to the FCC’s lifting of the August 3, 2004 “freeze” concerning expansion in service area.<sup>1</sup>

The current CP authorizes operation with an effective radiated power (“ERP”) of 13 kW at 247 meters antenna height above average terrain (“HAAT”), with a directional antenna. An increase in ERP to 42 kW is proposed herein. No other changes are proposed.

The proposed digital Channel 8 operation will employ the existing directional antenna system licensed for WFXI’s analog Channel 8. The antenna is a horizontally polarized ERI model ETH-P2L8-8. The directional antenna’s azimuthal pattern is depicted in **Figure 1**. **Figures 2** and **2A** provide the theoretical vertical plane (elevation) pattern<sup>2</sup>. The antenna is top-mounted on the existing WFXI antenna supporting structure, having FCC Antenna Structure Registration (“ASR”)

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<sup>1</sup>Public Notice “*Commission Lifts the Freeze On the Filing of Maximization Applications and Petitions for Digital Channel Substitutions, Effective Immediately*” DA 08-1213, released May 30, 2008.

<sup>2</sup>These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

number 1253623. No change to the overall structure height and no tower work are required to carry out this proposal.

A map is supplied as **Figure 3**, which depicts the standard predicted coverage contours. This map includes the location of Morehead City, WFXI-DT's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1), as the entire principal community will be encompassed by the 43 dBμ contour.

The proposed WFXI-DT facility's predicted service population provides a 125 percent match of the Appendix B facility, as detailed in the table below.

<b>Post-Transition Population Summary</b>		
Population Summary (2000 Census) OET Bulletin 69 method	Appendix B	Proposed
Within Noise Limited Contour	299,798	374,832
Not affected by terrain losses	299,798	374,832
Lost to all interference	0	0
Net DTV Service	<b>299,798</b>	<b>374,832</b>
Match of Appendix B	---	<b>125.03%</b>

A detailed interference study per OET Bulletin 69<sup>3</sup> shows that the proposal complies with the 0.5 percent limit of new interference caused to the Appendix B facilities and current post-transition authorizations of pertinent nearby stations. **Pursuant to §73.616(e)(1), FCC processing of this proposal is requested on the basis of a 1 km cell size.** The interference study output report is provided as **Table 1**. Protection requirements towards authorized Class A stations are also satisfied.

The nearest FCC monitoring station is 476 km distant at Livermore, CA. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). There are no AM stations within

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<sup>3</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. **A cell size of 1 km was employed.** Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

3.2 kilometers of the site, based on information contained within the Commission's database. The site location is beyond the border areas requiring international coordination.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposal will involve use of an existing transmitting antenna. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No tower construction or change in structure height is proposed. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 20 percent antenna relative field in downward elevations (pattern data shows less than 20 percent relative field at angles 20 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $0.9 \mu\text{W}/\text{cm}^2$ , which is 0.5 percent of the general population/uncontrolled maximum permitted exposure limit. This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.  
June 16, 2008

**Chesapeake RF Consultants, LLC**  
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Manassas, VA 20112  
703-650-9600

### List of Attachments

Figure 1      Antenna Horizontal Plane Pattern  
Figure 2, 2A    Antenna Vertical Plane (Elevation) Pattern  
Figure 3      Proposed Coverage Contours  
Table 1        OET Bulletin 69 Interference Study  
Form 301       Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered June 16, 2008 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

**Figure 1**  
**Antenna Horizontal**  
**Plane Pattern**

**AZIMUTH PATTERN**

**TYPE:**

	<u>Numeric</u>	<u>dB</u>
<b>Directivity:</b>	<u>2.26</u>	<u>3.54</u>
<b>Peak(s) at:</b>		

**Frequency:**

8

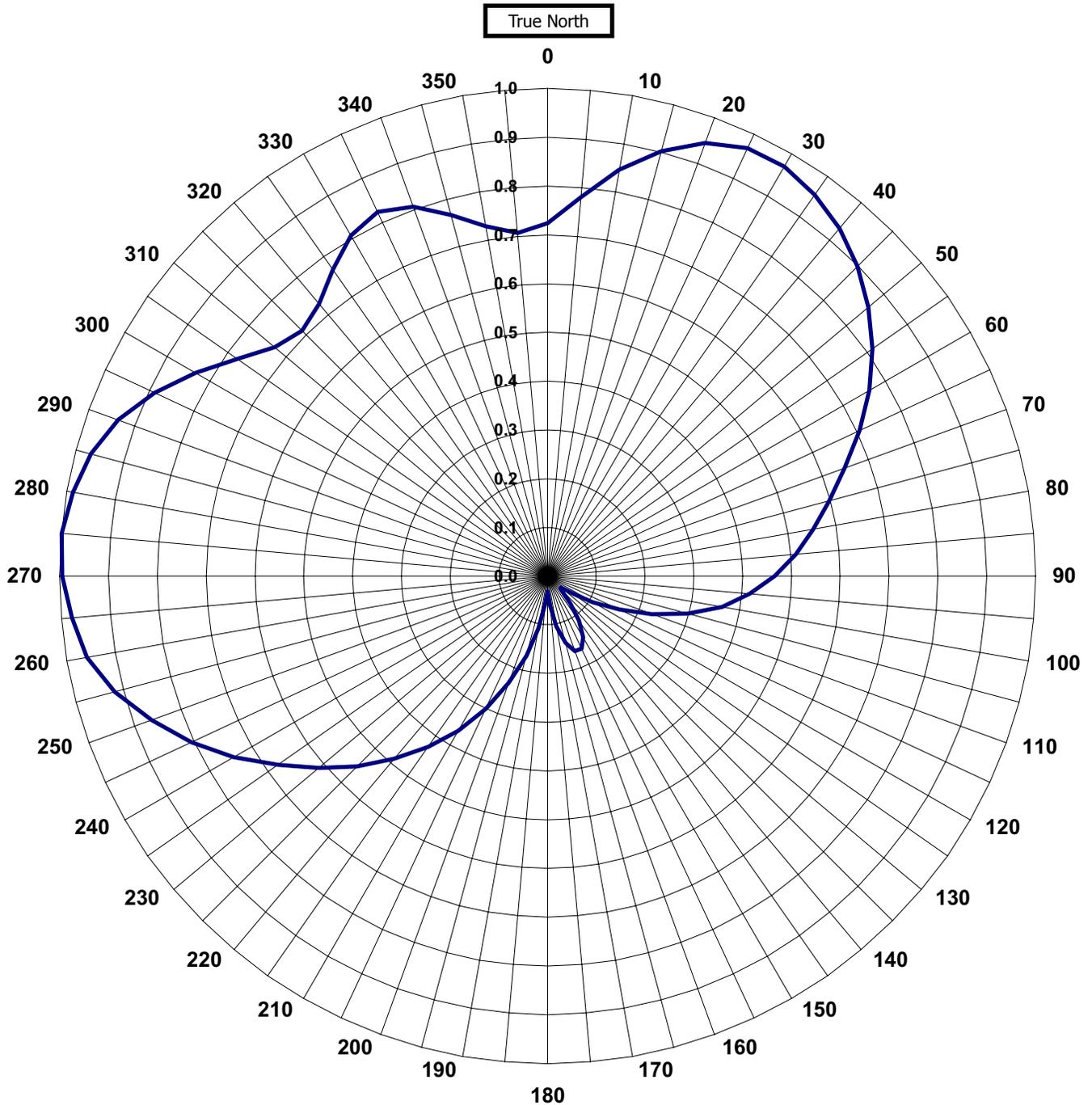
**Location:**

Morehead City, NC

**Polarization:**

Horizontal

Note: Pattern shape and directivity may vary with channel and mounting configuration.

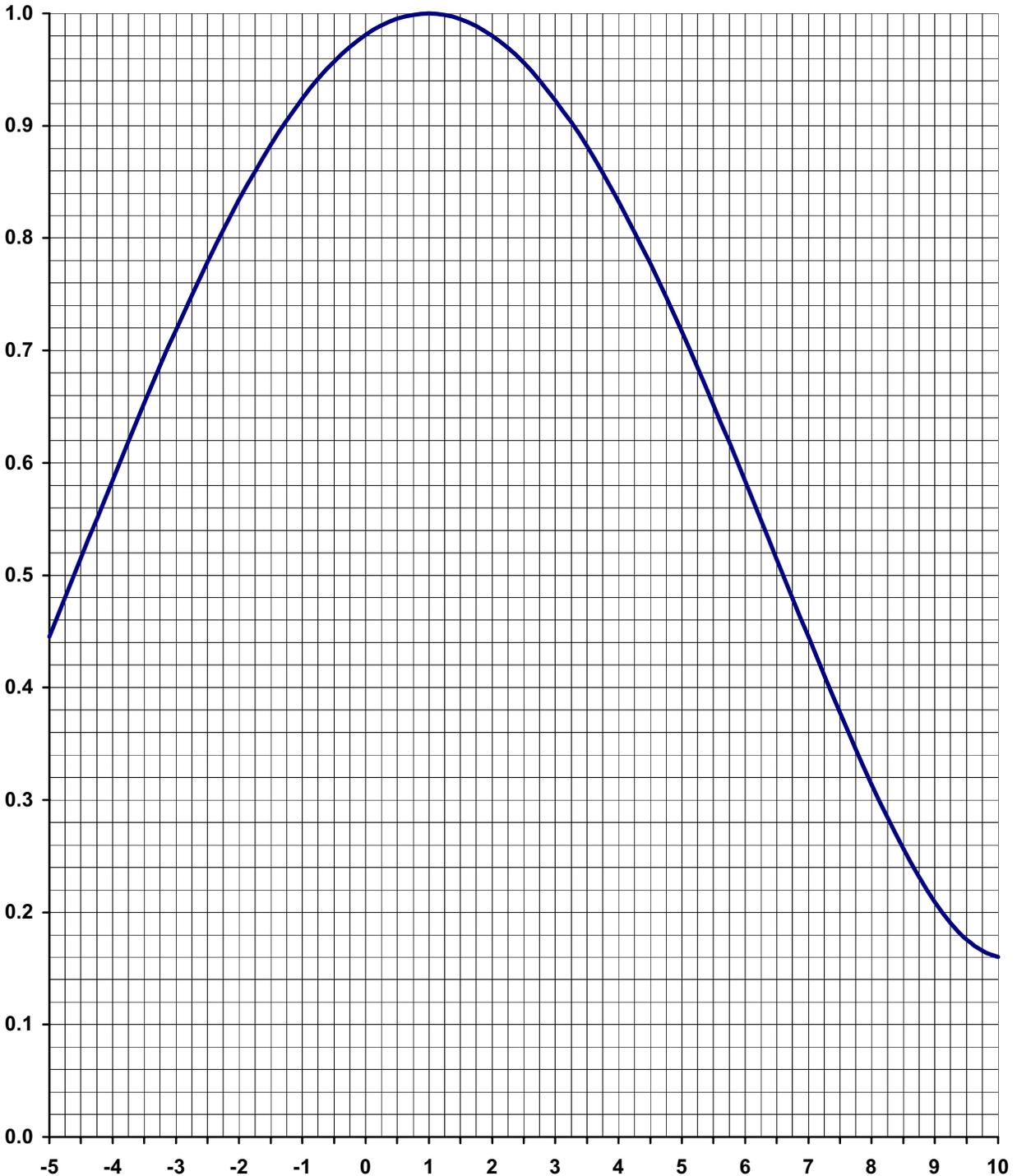


**Figure 2**  
**Antenna Vertical**  
**(Elevation) Plane Pattern**

**ELEVATION PATTERN**

<b>TYPE:</b>	<b>ETH-P2L8-8</b>	
<b>Directivity:</b>	<u>Numeric</u>	<u>dBd</u>
<b>Main Lobe:</b>	<u>7.22</u>	<u>8.59</u>
<b>Horizontal:</b>	<u>6.95</u>	<u>8.42</u>

<b>Frequency:</b>	<u>8</u>
<b>Location:</b>	<u>Morehead City, NC</u>
<b>Beam Tilt:</b>	<u>1.00</u>
<b>Polarization:</b>	<u>Horizontal</u>



**Figure 2A**  
**Antenna Vertical**  
**(Elevation) Plane Pattern**

**TABULATED DATA FOR ELEVATION PATTERN**

**ETH-P2L8-8**

*-5 to 10 degrees in 0.25 increments*

*10 to 90 degrees in 0.50 increments*

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.000	0.445	-7.02	6.75	0.480	-6.38	27.00	0.072	-22.84	50.50	0.062	-24.19	74.00	0.006	-44.01
-4.750	0.480	-6.37	7.00	0.445	-7.03	27.50	0.060	-24.47	51.00	0.056	-25.05	74.50	0.006	-44.58
-4.500	0.515	-5.76	7.25	0.411	-7.72	28.00	0.050	-25.99	51.50	0.050	-26.00	75.00	0.006	-45.19
-4.250	0.550	-5.19	7.50	0.378	-8.46	28.50	0.046	-26.78	52.00	0.044	-27.09	75.50	0.005	-45.51
-4.000	0.585	-4.66	7.75	0.345	-9.24	29.00	0.048	-26.32	52.50	0.039	-28.27	76.00	0.005	-45.85
-3.750	0.619	-4.16	8.00	0.314	-10.06	29.50	0.056	-24.99	53.00	0.033	-29.53	76.50	0.005	-46.20
-3.500	0.653	-3.70	8.25	0.284	-10.92	30.00	0.067	-23.45	53.50	0.029	-30.84	77.00	0.005	-46.38
-3.250	0.686	-3.27	8.50	0.257	-11.81	30.50	0.079	-22.07	54.00	0.025	-32.01	77.50	0.005	-46.74
-3.000	0.718	-2.88	8.75	0.231	-12.71	31.00	0.090	-20.91	54.50	0.023	-32.92	78.00	0.005	-46.94
-2.750	0.749	-2.51	9.00	0.209	-13.59	31.50	0.100	-19.97	55.00	0.022	-33.27	78.50	0.004	-47.33
-2.500	0.779	-2.17	9.25	0.190	-14.41	32.00	0.109	-19.26	55.50	0.022	-33.11	79.00	0.004	-47.54
-2.250	0.807	-1.86	9.50	0.176	-15.10	32.50	0.116	-18.74	56.00	0.024	-32.58	79.50	0.004	-47.96
-2.000	0.834	-1.57	9.75	0.166	-15.62	33.00	0.120	-18.39	56.50	0.026	-31.84	80.00	0.004	-48.40
-1.750	0.860	-1.32	10.00	0.160	-15.91	33.50	0.123	-18.20	57.00	0.028	-31.06	80.50	0.004	-48.87
-1.500	0.883	-1.08	10.50	0.162	-15.80	34.00	0.124	-18.17	57.50	0.030	-30.34	81.00	0.003	-49.63
-1.250	0.905	-0.87	11.00	0.176	-15.11	34.50	0.122	-18.28	58.00	0.033	-29.74	81.50	0.003	-50.17
-1.000	0.924	-0.68	11.50	0.194	-14.26	35.00	0.118	-18.54	58.50	0.035	-29.22	82.00	0.003	-51.06
-0.750	0.942	-0.52	12.00	0.211	-13.50	35.50	0.113	-18.95	59.00	0.036	-28.80	82.50	0.003	-51.70
-0.500	0.957	-0.38	12.50	0.226	-12.93	36.00	0.106	-19.53	59.50	0.038	-28.50	83.00	0.002	-52.77
-0.250	0.970	-0.26	13.00	0.236	-12.55	36.50	0.097	-20.29	60.00	0.039	-28.27	83.50	0.002	-53.98
0.000	0.981	-0.17	13.50	0.241	-12.38	37.00	0.087	-21.26	60.50	0.039	-28.13	84.00	0.002	-54.89
0.250	0.989	-0.09	14.00	0.240	-12.40	37.50	0.075	-22.48	61.00	0.039	-28.09	84.50	0.002	-56.48
0.500	0.995	-0.04	14.50	0.234	-12.62	38.00	0.063	-24.00	61.50	0.039	-28.09	85.00	0.001	-57.72
0.750	0.999	-0.01	15.00	0.223	-13.03	38.50	0.050	-25.99	62.00	0.039	-28.16	85.50	0.001	-60.00
1.000	1.000	0.00	15.50	0.208	-13.64	39.00	0.037	-28.64	62.50	0.038	-28.31	86.00	0.001	-61.94
1.250	0.999	-0.01	16.00	0.189	-14.47	39.50	0.024	-32.54	63.00	0.038	-28.52	86.50	0.001	-64.44
1.500	0.995	-0.04	16.50	0.168	-15.51	40.00	0.010	-39.74	63.50	0.036	-28.78	87.00	0.001	-66.02
1.750	0.989	-0.10	17.00	0.144	-16.82	40.50	0.003	-51.06	64.00	0.035	-29.09	87.50	0.000	-70.46
2.000	0.980	-0.17	17.50	0.120	-18.41	41.00	0.015	-36.31	64.50	0.034	-29.45	88.00	0.000	-73.98
2.250	0.969	-0.27	18.00	0.097	-20.28	41.50	0.027	-31.28	65.00	0.032	-29.87	88.50	0.000	-80.00
2.500	0.956	-0.39	18.50	0.077	-22.32	42.00	0.038	-28.31	65.50	0.030	-30.34	89.00	0.000	---
2.750	0.941	-0.53	19.00	0.063	-24.01	42.50	0.049	-26.27	66.00	0.029	-30.87	89.50	0.000	---
3.000	0.923	-0.70	19.50	0.060	-24.47	43.00	0.058	-24.76	66.50	0.027	-31.44	90.00	0.000	---
3.250	0.903	-0.88	20.00	0.067	-23.52	43.50	0.066	-23.64	67.00	0.025	-32.08			
3.500	0.882	-1.09	20.50	0.079	-22.03	44.00	0.073	-22.78	67.50	0.023	-32.73			
3.750	0.858	-1.33	21.00	0.093	-20.61	44.50	0.078	-22.14	68.00	0.021	-33.47			
4.000	0.833	-1.59	21.50	0.106	-19.48	45.00	0.083	-21.66	68.50	0.019	-34.24			
4.250	0.806	-1.88	22.00	0.117	-18.64	45.50	0.086	-21.34	69.00	0.018	-35.04			
4.500	0.777	-2.19	22.50	0.125	-18.05	46.00	0.088	-21.15	69.50	0.016	-35.92			
4.750	0.748	-2.53	23.00	0.130	-17.71	46.50	0.088	-21.08	70.00	0.015	-36.77			
5.000	0.717	-2.89	23.50	0.132	-17.60	47.00	0.088	-21.12	70.50	0.013	-37.72			
5.250	0.685	-3.29	24.00	0.130	-17.69	47.50	0.086	-21.27	71.00	0.012	-38.64			
5.500	0.652	-3.72	24.50	0.126	-17.99	48.00	0.084	-21.50	71.50	0.010	-39.66			
5.750	0.618	-4.18	25.00	0.119	-18.50	48.50	0.081	-21.84	72.00	0.009	-40.63			
6.000	0.584	-4.67	25.50	0.109	-19.22	49.00	0.077	-22.28	72.50	0.008	-41.51			
6.250	0.549	-5.21	26.00	0.098	-20.18	49.50	0.072	-22.82	73.00	0.008	-42.50			
6.500	0.514	-5.77	26.50	0.085	-21.39	50.00	0.067	-23.45	73.50	0.007	-43.22			

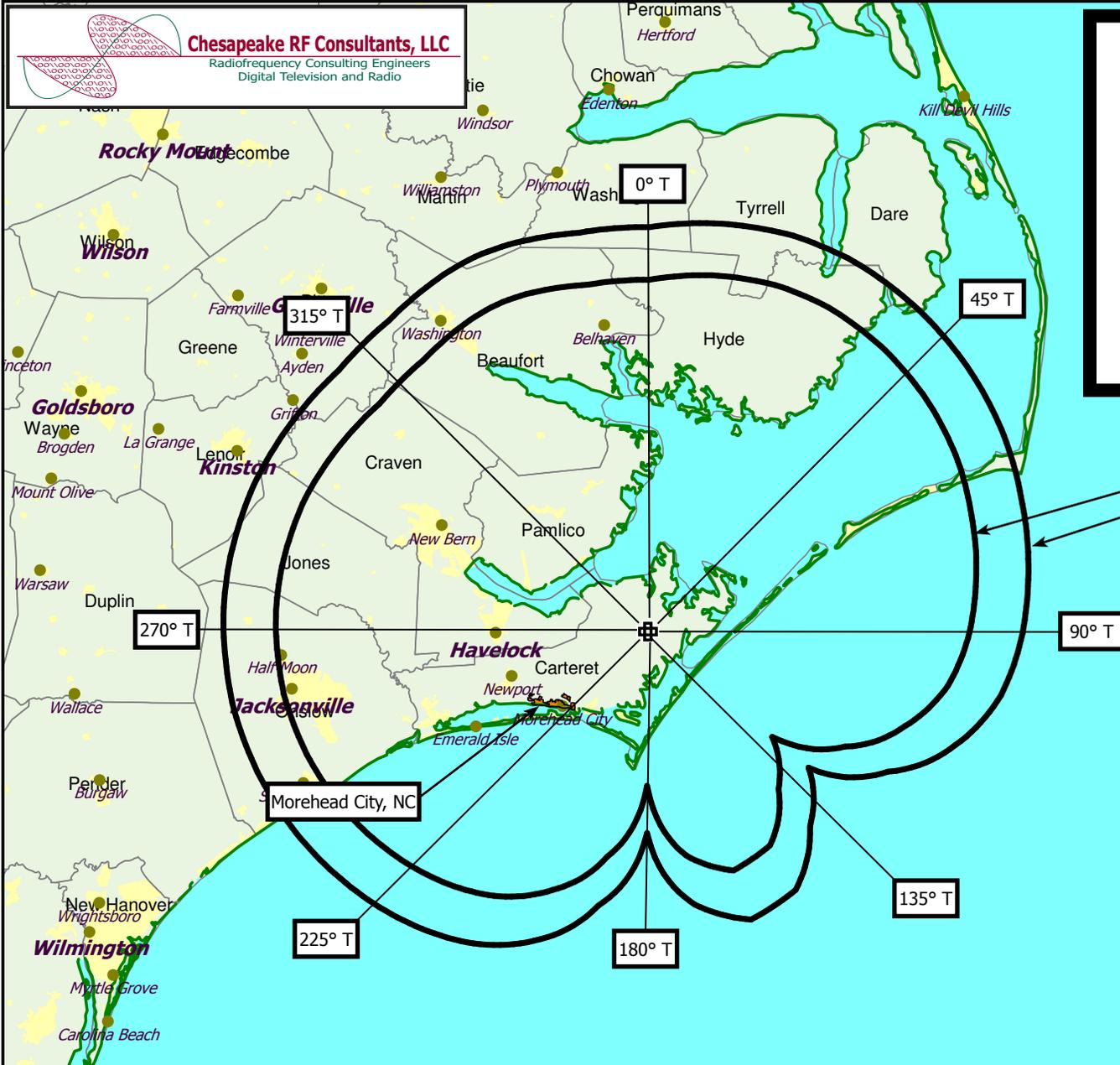
**Figure 3**  
**Proposed Coverage Contours**  
**WFXI-DT Morehead City, NC**  
**Facility ID 37982**  
**Ch. 8 42 kW 247 m**

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prepared for  
**Esteem Broadcasting**  
**of North Carolina LLC**

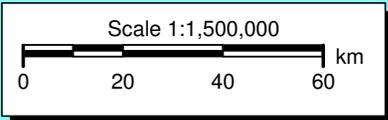
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June, 2008



Proposed WFXI-DT  
 DTV City Grade (43 dBμ)  
 DTV Service (36 dBμ)

Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	373,578	24,982.8
OET Bulletin 69 method		
Within noise limited contour	374,832	24,996.6
Not affected by terrain losses	374,832	24,996.6
Lost to all interference	0	0.0
Net DTV Service	374,832	24,996.6



**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 1 of 8)

**Cell Size = 1 km**

TW Census data selected 2000  
Post Transition Data Base Selected /space/software/cdbs/pt\_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 06-12-2008 Time: 23:14:25

Record Selected for Analysis

WFXI-DT USERRECORD-01 MOREHEAD CITY NC US  
Channel 08 ERP 42. kW HAAT 248. m RCAMSL 00249 m  
Latitude 034-53-01 Longitude 0076-30-22  
Status APP Zone 2 Border  
Dir Antenna Make CDB Model 00000000078074 Beam tilt N Ref Azimuth 0.  
Last update Cutoff date Docket  
Comments  
Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	36.0 dBu F(50,90) (km)
0.0	22.015	248.5	96.2
45.0	33.568	248.7	99.5
90.0	9.081	247.1	89.2
135.0	0.125	248.2	56.0
180.0	0.040	248.0	48.0
225.0	12.705	247.2	91.8
270.0	41.498	247.2	101.1
315.0	22.351	248.4	96.3

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 2 of 8)

**Cell Size = 1 km**

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Start of Interference Analysis

Channel	Call	Proposed Station City/State	ARN
08	WFXI-DT	MOREHEAD CITY NC	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
07	WHRE	VIRGINIA BEACH VA	214.0	CP	BPCDT	-20080303AJG
07	WHRE	VIRGINIA BEACH VA	214.0	PLN	DTVPLN	-DTVP0104
08	WGHP	HIGH POINT NC	319.5	CP	BPCDT	-20080311ACD
08	WGHP	HIGH POINT NC	319.5	PLN	DTVPLN	-DTVP0142
08	WOLO-TV	COLUMBIA SC	399.2	LIC	BLCDT	-20021106AAU
08	WOLO-TV	COLUMBIA SC	399.2	PLN	DTVPLN	-DTVP0160
08	WGSC-CA	MYRTLE BEACH SC	243.6	LIC	BLTVL	-19920107JC
09	WSKY-TV	MANTEO NC	182.9	CP	BPCDT	-20080610AAH
09	WSKY-TV	MANTEO NC	187.2	PLN	DTVPLN	-DTVP0207

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Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
07	WHRE	VIRGINIA BEACH VA	BPCDT	-20080303AJG

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
07	WJLA-TV	WASHINGTON DC	243.4	PLN	DTVPLN	-DTVP0052
07	WJLA-TV	WASHINGTON DC	243.4	CP	BPCDT	-20080507AAI
08	WFXI	MOREHEAD CITY NC	214.0	PLN	DTVPLN	-DTVP0143
08	WFXI-DT	MOREHEAD CITY NC	214.0	APP	USERRECORD-01	

Proposed station is beyond the site to nearest cell evaluation distance

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Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
07	WHRE	VIRGINIA BEACH VA	DTVPLN	-DTVP0104

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
07	WJLA-TV	WASHINGTON DC	243.4	PLN	DTVPLN	-DTVP0052
07	WJLA-TV	WASHINGTON DC	243.4	CP	BPCDT	-20080507AAI
08	WFXI	MOREHEAD CITY NC	214.0	PLN	DTVPLN	-DTVP0143
08	WFXI-DT	MOREHEAD CITY NC	214.0	APP	USERRECORD-01	

Proposed station is beyond the site to

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 3 of 8)

Cell Size = 1 km

nearest cell evaluation distance  
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Analysis of Interference to Affected Station 3

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
08	WGHP	HIGH POINT NC	BPCDT	-20080311ACD

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
08	WFXI	MOREHEAD CITY NC	319.5	PLN	DTVPLN	-DTVPO143
08	WOLO-TV	COLUMBIA SC	206.5	LIC	BLCDDT	-20021106AAU
08	WOLO-TV	COLUMBIA SC	206.5	PLN	DTVPLN	-DTVPO160
08	WVNS-TV	LEWISBURG WV	231.1	CP MOD	BMPCDT	-20040608ABO
08	WVNS-TV	LEWISBURG WV	231.1	PLN	DTVPLN	-DTVPO172
09	WHMC	CONWAY SC	217.6	LIC	BLEDT	-20050830ACK
09	WHMC	CONWAY SC	217.6	PLN	DTVPLN	-DTVPO219
08	WFXI-DT	MOREHEAD CITY NC	319.5	APP	USERRECORD-01	

Total scenarios = 4

Result key: 1  
Scenario 1 Affected station 3  
Before Analysis

Results for: 8A NC HIGH POINT BPCDT 20080311ACD CP  
HAAT 398.0 m, ATV ERP 11.5 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2822059	31175.7
not affected by terrain losses	2757497	30204.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	108610	1324.0
lost to ATV IX only	108610	1324.0
lost to all IX	108610	1324.0

Potential Interfering Stations Included in above Scenario 1

8A SC COLUMBIA	BLCDDT	20021106AAU	LIC
8A WV LEWISBURG	BMPCDT	20040608ABO	CP
8A NC MOREHEAD CITY	DTVPLN	DTVPO143	PLN

After Analysis

Results for: 8A NC HIGH POINT BPCDT 20080311ACD CP  
HAAT 398.0 m, ATV ERP 11.5 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2822059	31175.7
not affected by terrain losses	2757497	30204.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	111845	1394.2
lost to ATV IX only	111845	1394.2
lost to all IX	111845	1394.2

Potential Interfering Stations Included in above Scenario 1

8A SC COLUMBIA	BLCDDT	20021106AAU	LIC
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**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 4 of 8)

Cell Size = 1 km

8A WV LEWISBURG	BMPCDT	20040608ABO	CP
8A NC MOREHEAD CITY	USERRECORD01		APP

Percent new IX = 0.1221%

Worst case new IX 0.1221% Scenario 1

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Analysis of Interference to Affected Station 4

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
08	WGHP	HIGH POINT NC	DTVPLN	-DTVPO142

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
08	WFXI	MOREHEAD CITY NC	319.5	PLN	DTVPLN	-DTVPO143
08	WOLO-TV	COLUMBIA SC	206.5	LIC	BLCDDT	-20021106AAU
08	WOLO-TV	COLUMBIA SC	206.5	PLN	DTVPLN	-DTVPO160
08	WVNS-TV	LEWISBURG WV	231.1	CP MOD	BMPCDT	-20040608ABO
08	WVNS-TV	LEWISBURG WV	231.1	PLN	DTVPLN	-DTVPO172
09	WHMC	CONWAY SC	217.6	LIC	BLEDT	-20050830ACK
09	WHMC	CONWAY SC	217.6	PLN	DTVPLN	-DTVPO219
08	WFXI-DT	MOREHEAD CITY NC	319.5	APP	USERRECORD-01	

Total scenarios = 4

Result key: 5  
Scenario 1 Affected station 4  
Before Analysis

Results for: 8A NC HIGH POINT DTVPLN DTVPO142 PLN  
HAAT 398.0 m, ATV ERP 15.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2941343	32262.2
not affected by terrain losses	2870318	31255.9
lost to NTSC IX	0	0.0
lost to additional IX by ATV	109236	1283.4
lost to ATV IX only	109236	1283.4
lost to all IX	109236	1283.4

Potential Interfering Stations Included in above Scenario 1

8A SC COLUMBIA	BLCDDT	20021106AAU	LIC
8A WV LEWISBURG	BMPCDT	20040608ABO	CP
8A NC MOREHEAD CITY	DTVPLN	DTVPO143	PLN

After Analysis

Results for: 8A NC HIGH POINT DTVPLN DTVPO142 PLN  
HAAT 398.0 m, ATV ERP 15.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2941343	32262.2
not affected by terrain losses	2870318	31255.9
lost to NTSC IX	0	0.0
lost to additional IX by ATV	122752	1379.4
lost to ATV IX only	122752	1379.4

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 5 of 8)

**Cell Size = 1 km**

lost to all IX 122752 1379.4  
 Potential Interfering Stations Included in above Scenario 1  
 8A SC COLUMBIA BLCDT 20021106AAU LIC  
 8A WV LEWISBURG B MPCDT 20040608ABO CP  
 8A NC MOREHEAD CITY USERRECORD01 APP  
 Percent new IX = 0.4895%  
 Worst case new IX 0.4895% Scenario 1  
 #####

Analysis of Interference to Affected Station 5

Analysis of current record  
 Channel Call City/State Application Ref. No.  
 08 WOLO-TV COLUMBIA SC BLCDT -20021106AAU

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist (km)	Status	Application Ref. No.
07	WITV	CHARLESTON SC	165.2	PLN	DTVPLN -DTVPO094
07	WITV	CHARLESTON SC	165.2	CP	BPEDT -20080312ACL
07	WSPA-TV	SPARTANBURG SC	182.2	PLN	DTVPLN -DTVPO095
07	WSPA-TV	SPARTANBURG SC	182.2	CP	BPCDT -20080410AAX
08	WGTV	ATHENS GA	313.5	CP	BPEDT -20080317AAR
08	WGTV	ATHENS GA	313.5	PLN	DTVPLN -DTVPO118
08	WACS-TV	DAWSON GA	428.2	CP MOD	BMPEDT -20080227ABT
08	WACS-TV	DAWSON GA	428.2	PLN	DTVPLN -DTVPO119
08	WXGA-TV	WAYCROSS GA	363.5	CP	BPEDT -20080317AAS
08	WXGA-TV	WAYCROSS GA	363.5	PLN	DTVPLN -DTVPO120
08	WGHP	HIGH POINT NC	206.5	CP	BPCDT -20080311ACD
08	WGHP	HIGH POINT NC	206.5	PLN	DTVPLN -DTVPO142
08	WFXI	MOREHEAD CITY NC	399.3	PLN	DTVPLN -DTVPO143
08	WVNS-TV	LEWISBURG WV	406.5	CP MOD	BMPEDT -20040608ABO
08	WVNS-TV	LEWISBURG WV	406.5	PLN	DTVPLN -DTVPO172
09	WHMC	CONWAY SC	153.6	LIC	BLEDT -20050830ACK
09	WHMC	CONWAY SC	153.6	PLN	DTVPLN -DTVPO219
09	WNTV	GREENVILLE SC	176.5	LIC	BLEDT -20041123AKQ
09	WNTV	GREENVILLE SC	176.5	PLN	DTVPLN -DTVPO220
08	WFXI-DT	MOREHEAD CITY NC	399.2	APP	USERRECORD-01

Proposal causes no interference

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Analysis of Interference to Affected Station 6

Analysis of current record  
 Channel Call City/State Application Ref. No.  
 08 WOLO-TV COLUMBIA SC DTVPLN -DTVPO160

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist (km)	Status	Application Ref. No.
07	WITV	CHARLESTON SC	165.2	PLN	DTVPLN -DTVPO094
07	WITV	CHARLESTON SC	165.2	CP	BPEDT -20080312ACL

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 6 of 8)

**Cell Size = 1 km**

07	WSPA-TV	SPARTANBURG SC	182.2	PLN	DTVPLN -DTVPO095
07	WSPA-TV	SPARTANBURG SC	182.2	CP	BPCDT -20080410AAX
08	WGTV	ATHENS GA	313.5	CP	BPEDT -20080317AAR
08	WGTV	ATHENS GA	313.5	PLN	DTVPLN -DTVPO118
08	WACS-TV	DAWSON GA	428.2	CP MOD	BMPEDT -20080227ABT
08	WACS-TV	DAWSON GA	428.2	PLN	DTVPLN -DTVPO119
08	WXGA-TV	WAYCROSS GA	363.5	CP	BPEDT -20080317AAS
08	WXGA-TV	WAYCROSS GA	363.5	PLN	DTVPLN -DTVPO120
08	WGHP	HIGH POINT NC	206.5	CP	BPCDT -20080311ACD
08	WGHP	HIGH POINT NC	206.5	PLN	DTVPLN -DTVPO142
08	WFXI	MOREHEAD CITY NC	399.3	PLN	DTVPLN -DTVPO143
08	WVNS-TV	LEWISBURG WV	406.5	CP MOD	BMPEDT -20040608ABO
08	WVNS-TV	LEWISBURG WV	406.5	PLN	DTVPLN -DTVPO172
09	WHMC	CONWAY SC	153.6	LIC	BLEDT -20050830ACK
09	WHMC	CONWAY SC	153.6	PLN	DTVPLN -DTVPO219
09	WNTV	GREENVILLE SC	176.5	LIC	BLEDT -20041123AKQ
09	WNTV	GREENVILLE SC	176.5	PLN	DTVPLN -DTVPO220
08	WFXI-DT	MOREHEAD CITY NC	399.2	APP	USERRECORD-01

Proposal causes no interference

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Analysis of Interference to Affected Station 7

Analysis of current record  
 Channel Call City/State Application Ref. No.  
 08 WGSC-CA MYRTLE BEACH SC BLTVL -19920107JC

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist (km)	Status	Application Ref. No.
07	WITV	CHARLESTON SC	125.9	LIC	BLET -19900809KE
07	WITV	CHARLESTON SC	125.9	PLN	DTVPLN -DTVPO094
07	WITV	CHARLESTON SC	125.9	CP	BPEDT -20080312ACL
08	WGHP	HIGH POINT NC	247.5	CP	BPCDT -20080311ACD
08	WGHP	HIGH POINT NC	247.5	PLN	DTVPLN -DTVPO142
08	WGHP	HIGH POINT NC	247.5	LIC	BLCT -20070126AFQ
08	WFXI	MOREHEAD CITY NC	243.6	LIC	BLCT -20070813ACB
08	WFXI	MOREHEAD CITY NC	243.6	PLN	DTVPLN -DTVPO143
08	WOLO-TV	COLUMBIA SC	186.6	LIC	BLCDT -20021106AAU
08	WOLO-TV	COLUMBIA SC	186.6	PLN	DTVPLN -DTVPO160
09	WHMC	CONWAY SC	36.3	LIC	BLEDT -20050830ACK
09	WHMC	CONWAY SC	36.3	PLN	DTVPLN -DTVPO219
08	WFXI-DT	MOREHEAD CITY NC	243.6	APP	USERRECORD-01

Proposal causes no interference

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Analysis of Interference to Affected Station 8

Analysis of current record  
 Channel Call City/State Application Ref. No.  
 09 WSKY-TV MANTEO NC BPCDT -20080610AAH

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist (km)	Status	Application Ref. No.
08	WFXI	MOREHEAD CITY NC	182.9	PLN	DTVPLN -DTVPO143

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 7 of 8)

**Cell Size = 1 km**

09	WUSA	WASHINGTON DC	278.5	PLN	DTVPLN	-DTVPO186
09	WUSA	WASHINGTON DC	278.5	CP MOD	BMPCDT	-20080425ABL
09	WHMC	CONWAY SC	382.7	LIC	BLEDT	-20050830ACK
09	WHMC	CONWAY SC	382.7	PLN	DTVPLN	-DTVPO219
10	WNCT-TV	GREENVILLE NC	161.6	CP MOD	BMPCDT	-20040730ARH
10	WNCT-TV	GREENVILLE NC	161.6	PLN	DTVPLN	-DTVPO276
08	WFXI-DT	MOREHEAD CITY NC	182.9	APP	USERRECORD-01	

Proposal causes no interference

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Analysis of Interference to Affected Station 9

Analysis of current record

Channel	Call	City/State	Application Ref. No.
09	WSKY-TV	MANTEO NC	DTVPLN -DTVPO207

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
08	WFXI	MOREHEAD CITY NC	187.2	PLN	DTVPLN -DTVPO143
09	WUSA	WASHINGTON DC	278.2	PLN	DTVPLN -DTVPO186
09	WUSA	WASHINGTON DC	278.2	CP MOD	BMPCDT -20080425ABL
09	WHMC	CONWAY SC	392.0	LIC	BLEDT -20050830ACK
09	WHMC	CONWAY SC	392.0	PLN	DTVPLN -DTVPO219
10	WNCT-TV	GREENVILLE NC	170.5	CP MOD	BMPCDT -20040730ARH
10	WNCT-TV	GREENVILLE NC	170.5	PLN	DTVPLN -DTVPO276
08	WFXI-DT	MOREHEAD CITY NC	187.2	APP	USERRECORD-01

Proposal causes no interference

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Analysis of Interference to Affected Station 10

Analysis of current record

Channel	Call	City/State	Application Ref. No.
08	WFXI-DT	MOREHEAD CITY NC	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
07	WHRE	VIRGINIA BEACH VA	214.0	CP	BPCDT -20080303AJG
07	WHRE	VIRGINIA BEACH VA	214.0	PLN	DTVPLN -DTVPO104
08	WGHP	HIGH POINT NC	319.5	CP	BPCDT -20080311ACD
08	WGHP	HIGH POINT NC	319.5	PLN	DTVPLN -DTVPO142
08	WOLO-TV	COLUMBIA SC	399.2	LIC	BLCDT -20021106AAU
08	WOLO-TV	COLUMBIA SC	399.2	PLN	DTVPLN -DTVPO160
09	WSKY-TV	MANTEO NC	182.9	CP	BPCDT -20080610AAH
09	WSKY-TV	MANTEO NC	187.2	PLN	DTVPLN -DTVPO207

Total scenarios = 1

Result key:

Scenario 1 Affected station 10  
Before Analysis

**Table 1 WFXI-DT OET Bulletin 69 Interference Study**  
(worst-case scenarios shown page 8 of 8)

**Cell Size = 1 km**

Results for: 8A NC MOREHEAD CITY		USERRECORD01	APP
HAAT 248.0 m, ATV ERP 42.0 kW			
within Noise Limited Contour	POPULATION	AREA (sq km)	
not affected by terrain losses	374832	24996.6	
lost to NTSC IX	0	0.0	
lost to additional IX by ATV	0	0.0	
lost to ATV IX only	0	0.0	
lost to all IX	0	0.0	

Potential Interfering Stations Included in above Scenario 1

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

SECTION III-D - DTV Engineering	
Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.	
<p><b>Pre-Transition Certification Checklist:</b> An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.</p> <p><b>Post-Transition Expedited Processing.</b> An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.</p>	
1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must <b>submit the Exhibit</b> called for in Item 13.	<input checked="" type="radio"/> Yes <input type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	<input checked="" type="radio"/> Yes <input type="radio"/> No

SECTION III-D - DTV Engineering	
TECHNICAL SPECIFICATIONS	
Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.	
TECH BOX	
1. Channel Number:	DTV 8 Analog TV, if any 8
2. Zone:	<input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III
3. Antenna Location Coordinates: (NAD 27)	Latitude: Degrees 34 Minutes 53 Seconds 1 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 76 Minutes 30 Seconds 22 <input checked="" type="radio"/> West <input type="radio"/> East
4. Antenna Structure Registration Number: 1253623	<input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level:	1.5 meters
6. Overall Tower Height Above Ground Level:	257.3 meters
7. Height of Radiation Center Above Ground Level:	247 meters
8. Height of Radiation Center Above Average Terrain :	247.4 meters

9. Maximum Effective Radiated Power (average power): 42 kW

10. Antenna Specifications:

a. Manufacturer ERI Model ETH-P2L8-8

b. Electrical Beam Tilt:  
1 degrees  Not Applicable

c. Mechanical Beam Tilt:  
degrees toward azimuth  
degrees True  Not Applicable  
Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 42]

d. Polarization:  
 Horizontal  Circular  Elliptical

e. Directional Antenna Relative Field Values:  Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]  
[Relative Field Values]

**10e. Directional Antenna Relative Field Values**

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:  
Rotation (Degrees): 0  No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.724	10	0.846	20	0.945	30	0.97	40	0.93	50	0.858
60	0.762	70	0.648	80	0.553	90	0.465	100	0.363	110	0.227
120	0.108	130	0.036	140	0.073	150	0.145	160	0.164	170	0.106
180	0.031	190	0.109	200	0.233	210	0.367	220	0.488	230	0.612
240	0.742	250	0.863	260	0.958	270	0.994	280	0.988	290	0.937
300	0.834	310	0.73	320	0.729	330	0.806	340	0.806	350	0.728
Additional Azimuths		28	0.972	157	0.167	274	1	335	0.823		

[Relative Field Polar Plot](#)

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?  Yes  No [Exhibit 44]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]  
If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.  
  
By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.  
  
If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

**PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.**

**SECTION III - PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature	Date 6/16/2008	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

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Any specified rotation has already been applied to the plotted pattern.

Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.

