Comprehensive Engineering Exhibit

Application for Construction Permit

WJCD Norfolk, Virginia

This exhibit is in support of an application responsive to the Report and Order in MB Docket No. 05-150 for a change of community, Station WJCD, Channel 299A, from Windsor, Virginia to Norfolk, Virginia. Also sought via this application is a "one-step" change in the class of WJCD from class "A" to "B1" remaining on the present channel of 299.

The proposed "Allotment or Assignment Coordinates" (allotment location) required for use of a "one-step" procedure has been studied, as shown in Figure 1 below, and a Section 73.207 fully spaced B1 class facility can be constructed upon an existing tower identified by structure registration number 1210560. Also attached below as Figure 2 is a map showing the predicted coverage contours from this location.

As indicated in Figure 2, the proposed predicted 70 dBu F50:50 contour does not fully encompass the city limits of Norfolk from the allotment location. However, because the allocation location is that of an existing tower, an alternative method of determining the distance to the 70 dBu contour is appropriate.[1] Use of the Longley-Rice propagation model demonstrates that all of Norfolk is encompassed as required. It is believed that this supplemental showing using an alternative contour prediction method is justified in this application by the very flat terrain of the area. Along a 319° radial running approximately through the center of Norfolk from the proposed allocation tower, to beyond the most distant boundary of Norfolk, the Δh was determined to be 5.0 meters, the standard F50:50 method assumes a ΔH of 50 meters, thus application of this supplemental prediction method is appropriate.

Terrain profiles for the 293°, 319°, and 345° radials were calculated to have a value of Δh of 3.6, 4.0, and 5.0 meters respectively as shown in Figures 3 to 5 below. The U.S.G.S. 3-second terrain database was utilized in all calculations and determinations herein.

The Longley-Rice method, as implemented in the microcomputer program "V-Soft", utilizing the values and parameters shown in Figure 2 was employed to calculate signal values. The distance to a "median" 70 dBu signal was determined to be 30.4 kilometers, while the distance to the F50:50 contour is 21.4 kilometers. This represents a 42% greater distance than by FCC F50:50 predictions.

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[1] Pursuant to Woodstock and Broadway, Virginia, 3 FCC Rcd 6398 (1988).

The owner of the existing tower at the "allocation location" has granted reasonable site assurance to the applicant. Thus this "allocation location" tower has been demonstrated to be a viable fully spaced Section 73.207 location for WJCD.

The proposed "Antenna Location Coordinates" (antenna location) for WJCD is at an existing tower identified by structure registration number 1053614 at a height above ground level of 128 meters. This height, at this location, will produce a height above average terrain of 130 meters, as determined by the FCC's web tool. This is a height 30 meters above the maximum for full 25,000 Watt operation of a Class B1 facility. The FCC web tool FM Power was used to determine the operating power of 15, 000 Watts to be the appropriate equivalent power.

Use of Section 73.215 is requested. This proposed location is not fully spaced in accordance with Section 73.207 to the licensed facilities of WBQK, West Point, Virginia and WNCT-FM Grenville, North Carolina, as shown in Figure 1A. A directional antenna is proposed to prevent prohibited contour overlap by the proposed facility of WJCD to WBQK. No prohibited contour overlap will exist with WNCT-FM. Figure 6 below demonstrates that no prohibited contour overlap will be produced by this proposal.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation."

The proposed antenna system is unknown at this time thus this study utilized an EPA type 1, 6-bay, full wave spaced, "Ring Stub " antenna, mounted with its center of radiation 128 meters above ground level, and will operate with an effective radiated power of 15 kW in both the horizontal and vertical planes. At 2 meters above ground, at 33 meters from the base of the tower, this proposal will contribute worst case, 36.3 microWatts per square centimeter, or 3.63 percent of the allowable ANSI limit for controlled exposure, and 18.2 percent of the allowable limit for uncontrolled exposure. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission. No known non-exempt radiators are thought to exist within 1 km of the site.

Further, the applicant will ensure that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary, to limit human exposure to levels less than that specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

Figure 1. Spacing from Allocation Location

ComStudy 2.2 search of Channel 299 (107.7 MHz Class B1) at 36-45-36.7 N, 76-07-24.1 W.

Callsign	State	City	Freq	Chanl	ERP_w	Class	Status	Dist_km	Reqd Sep	Clr
	VA	NORFOLK	107.7	299	0	A	RSV	21.46	143	-121.54
WJCD	VA	WINDSOR	107.7	299	6000	A	LIC	38.03	143	-104.97
WNCT-FM	NC	GREENVILLE	107.9	300	0	C	USE	192.51	193	-0.49
WNCT-FM	NC	GREENVILLE	107.9	300	100000	C	LIC	192.51	193	-0.49
WBQK	VA	WEST POINT	107.9	300	4000	A	LIC	98.06	96	2.06
WBQK	VA	WEST POINT	107.9	300	0	A	USE	104.59	96	8.59
DWGNJ*	VA	ALBERTA	107.7	299	0	A	RSV	158.26	143	15.26
WHCK-LP	VA	HOPEWELL	107.7	299	100	LP100	LIC	126.59	87	39.59

Figure 1A. Spacing from Antenna Location

ComStudy 2.2 search of Channel 299 (107.7 MHz Class B1) at 36-48-37.0 N, 76-16-58.7 W.

Callsign	State	City	Freq	Chanl	ERP_w	Class	Status	Dist_km	Reqd Sep	Clr
	VA	NORFOLK	107.7	299	0	A	RSV	12.92	143	-130.08
WBQK	VA	WEST POINT	107.9	300	4000	A	LIC	85.19	96	-10.81
WNCT-FM	NC	GREENVILLE	107.9	300	0	C	USE	188.99	193	-4.01
WNCT-FM	NC	GREENVILLE	107.9	300	100000	C	LIC	188.99	193	-4.01
DWGNJ*	VA	ALBERTA	107.7	299	0	A	RSV	143.66	143	0.66
WHCK-LP	VA	HOPEWELL	107.7	299	100	LP100	LIC	111.35	87	24.35
W245BB	VA	NEWPORT NEWS	96.9	245	80	D	LIC	33.09	0	33.09
WNNT-FM	VA	WARSAW	107.5	298	6000	A	CP	132.5	96	36.5

Figure 2. Predicted Coverage Contour at Allocation Site

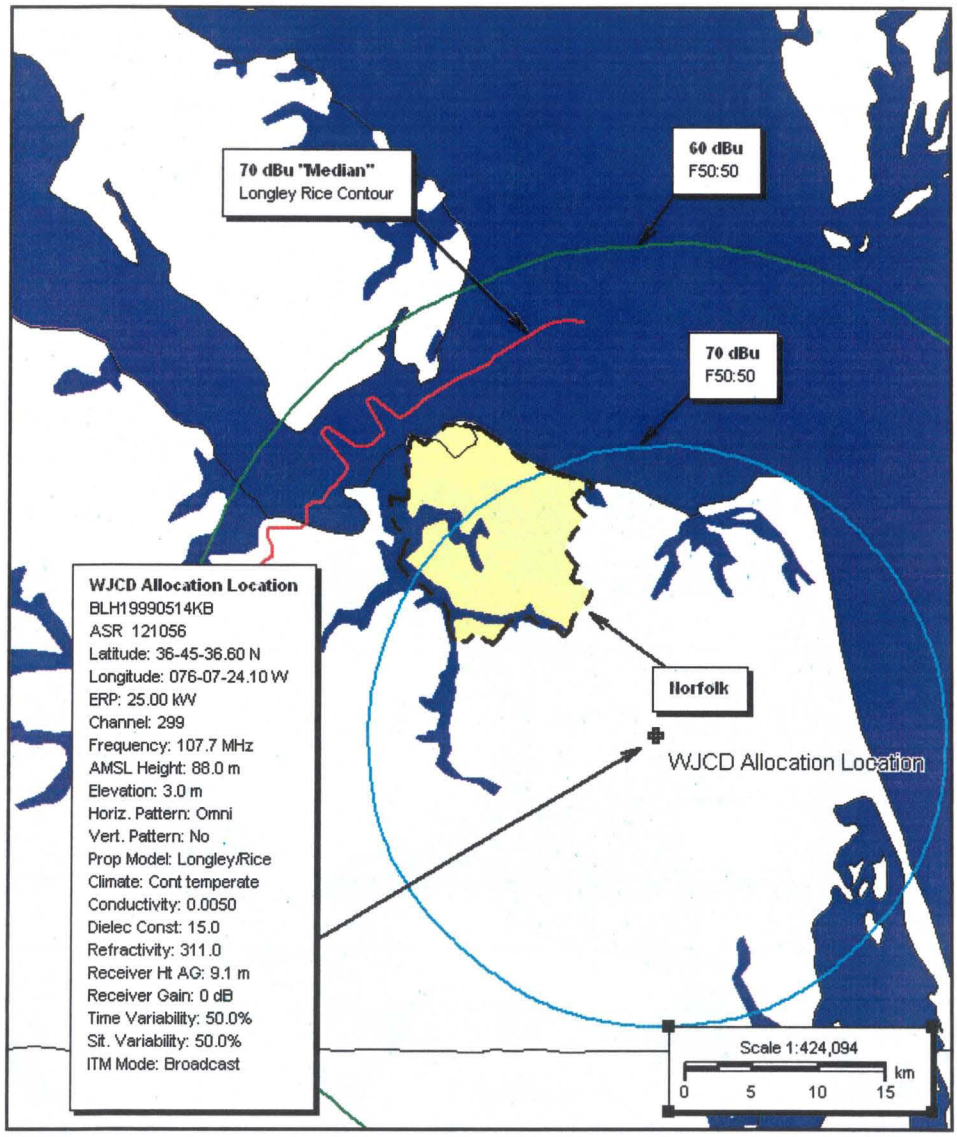

Figure 3. 293˚ Radial

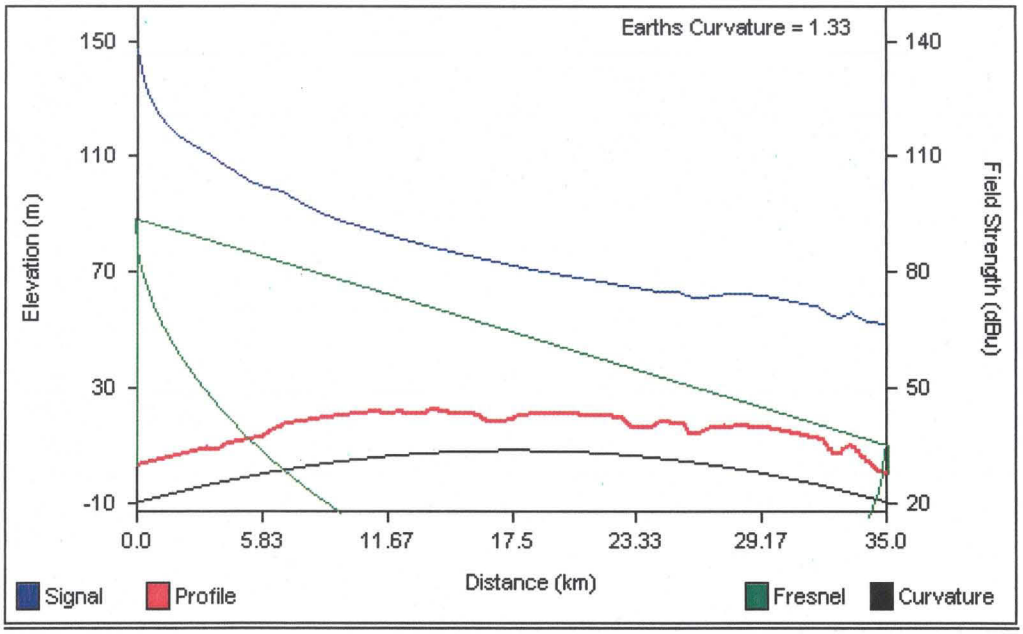

Figure 4. 319˚ Radial

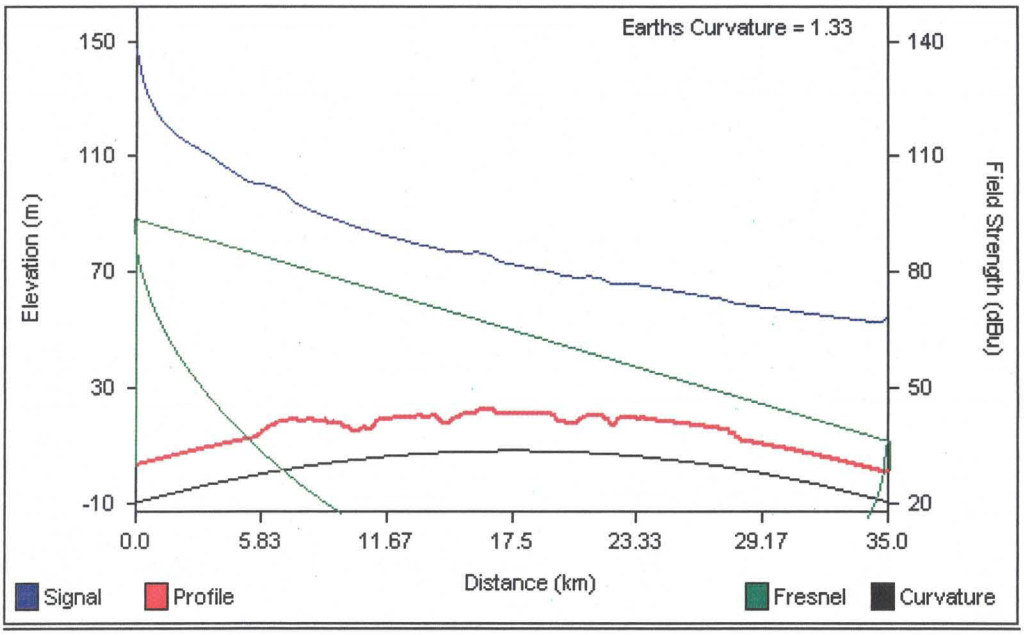

Figure 5. 345° Radial

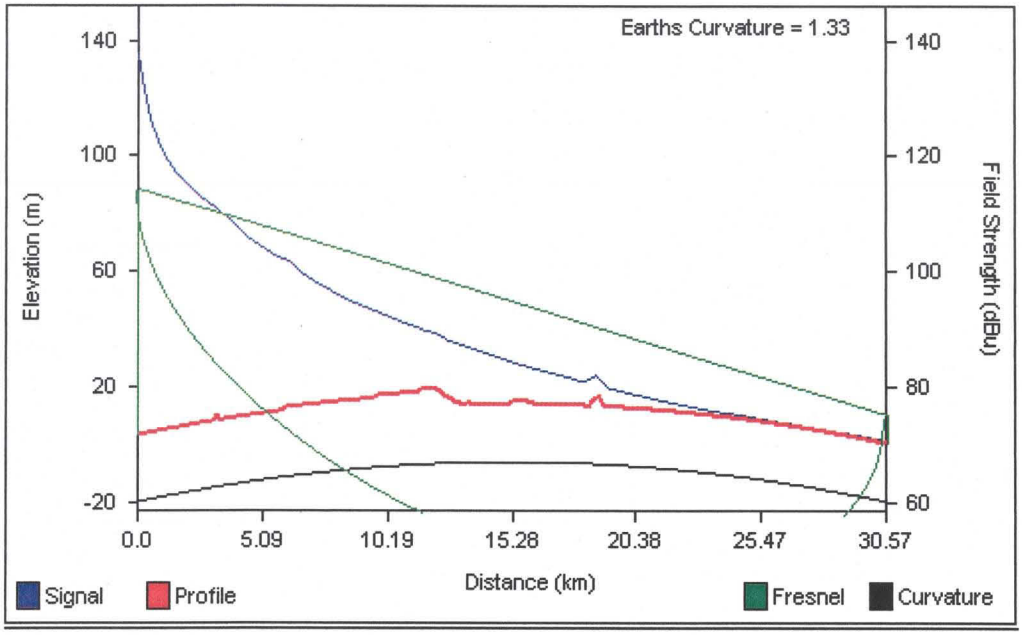

Figure 6. 73.215 Contour Map

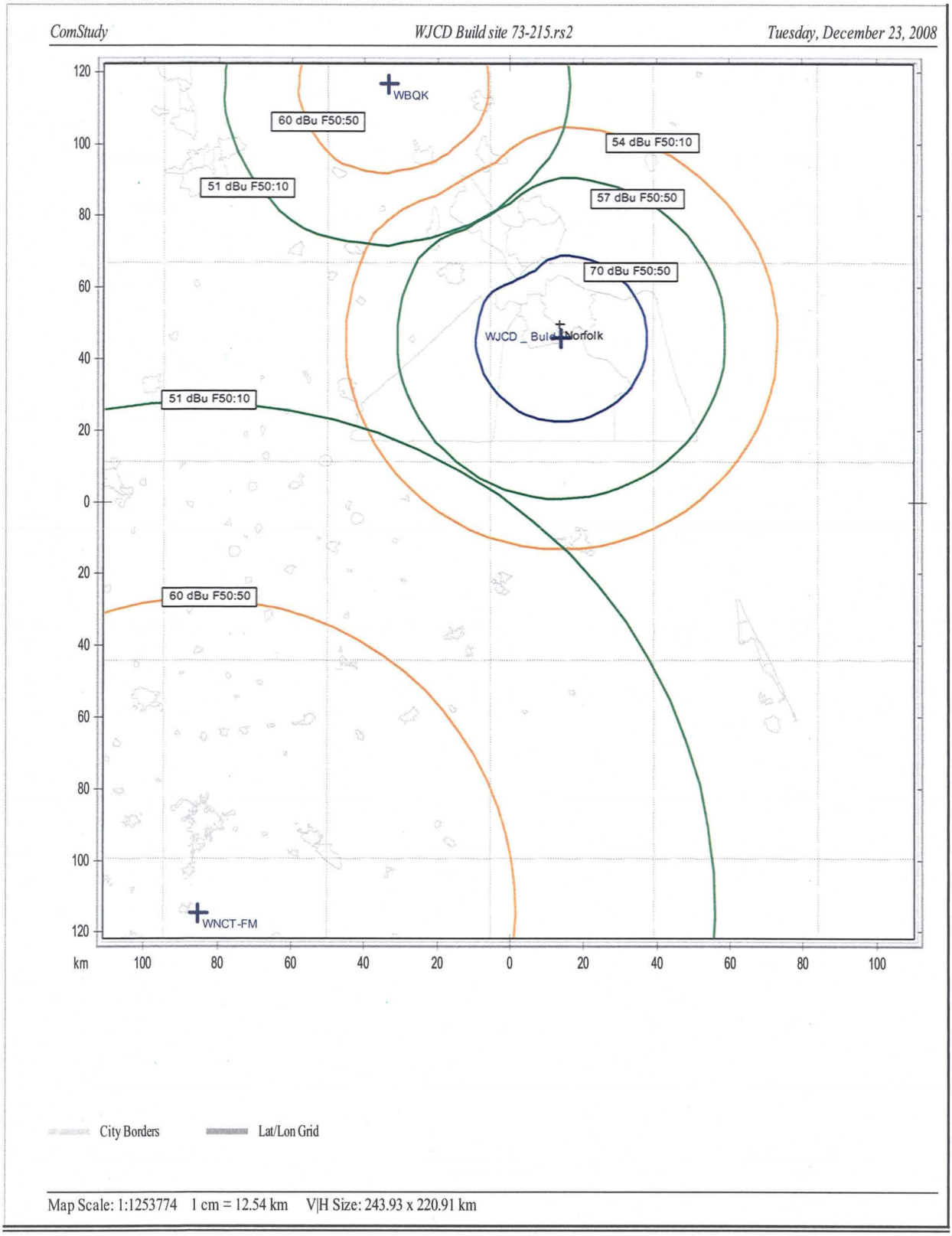

Figure 6 Continued