

TECHNICAL EXHIBIT  
DTV MAXIMIZATION APPLICATION FOR  
STATION WTVQ-DT (FACILITY ID 51597)  
LEXINGTON, KENTUCKY

NOVEMBER 13, 2008

CH 40 635 KW (MAX-DA) 284 M

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Technical Narrative

This Technical Exhibit supports a maximization application for digital television (DTV) station WTVQ-DT for its final DTV operation at Lexington, Kentucky. This application requests a construction permit (CP) for post-transition operation on its digital channel (40), using its current, directional antenna.

Proposed Facilities

Station WTVQ-DT proposes only to increase its ERP to 635 kW. No other changes are proposed to the licensed WTVQ-DT operation herein. The antenna height above average terrain (HAAT) has been corrected to 284 meters, per the OET-69 interference software calculation. The transmitter site coordinates are:

38° 02' 03" North Latitude  
84° 23' 39" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1. Figure 2 depicts the proposed antenna patterns.

Figure 3 is a map showing the DTV predicted coverage contours. The predicted 48 dBu contour will encompass all of Lexington. The Lexington city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

### Population Served

The herein proposed WTVQ-DT facility is predicted to serve 880,945 persons, post-transition, based upon the 2000 Census. WTVQ-DT's associated Appendix B facility is predicted to serve 810,529 persons. Therefore, the herein proposed WTVQ-DT facility would serve more than 100% of WTVQ-DT's Appendix B population.

### Allocation Considerations – *post-transition*

An allocation study was completed to ensure no prohibited interference would occur in the post-transition era. The proposed WTVQ-DT operation meets the FCC's post-transition interference standards to pertinent Class A and DTV allotments using the procedures outlined in the FCC's OET-69 Bulletin and a non-standard 1 kilometer grid cell size and 0.2 kilometer terrain distance increment. The results of the interference analyses are summarized in Figure 4.

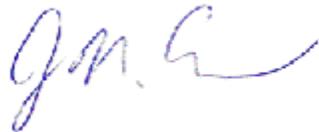
### Radiofrequency Electromagnetic Field Exposure

The proposed WTVQ-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The proposed radiation center for the existing DTV antenna is located 273 meters above ground level with a maximum ERP of 635 kW. A conservative relative field value of 0.2 was assumed for the calculation. The calculated power density at a point 2 meters above ground level will not exceed  $0.012 \text{ mW/cm}^2$ . This is less than 5% of the FCC's recommended limit of  $0.42 \text{ mW/cm}^2$  for channel 40 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site an agreement will control site access. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency

radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WTVQ-DT operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.



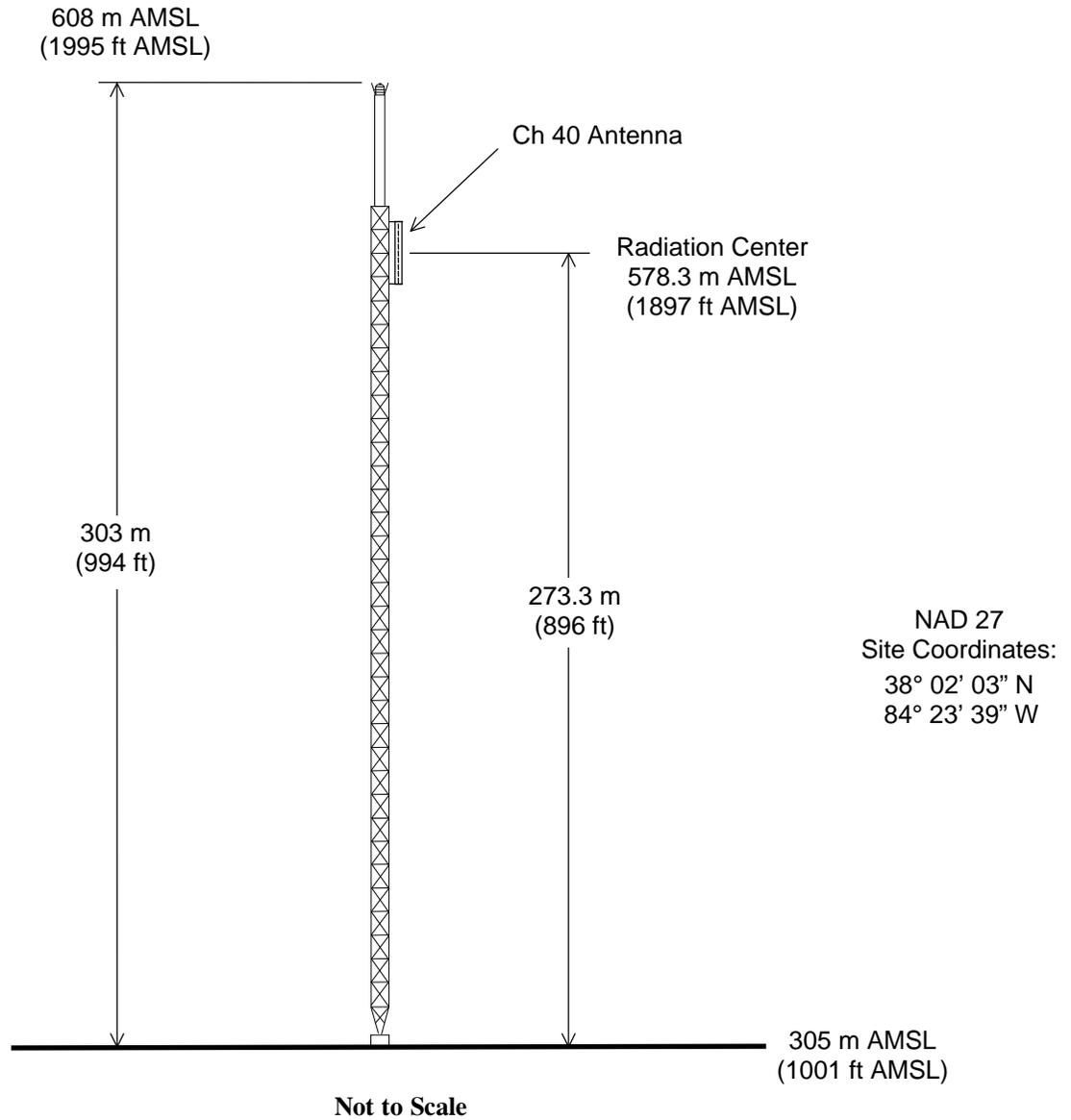
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Registration No. 1044034



## ANTENNA AND SUPPORTING STRUCTURE

STATION WTVQ-DT

LEXINGTON, KENTUCKY

CH 40 635 KW (MAX-DA) 284 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



Proposal Number

Revision: **1**

Date

Call Letters

**WTVQ-DT**

Channel

**40**

Location

**Lexington, KY**

Customer

Antenna Type

**TFU-30DSC-R 3S180 DC**

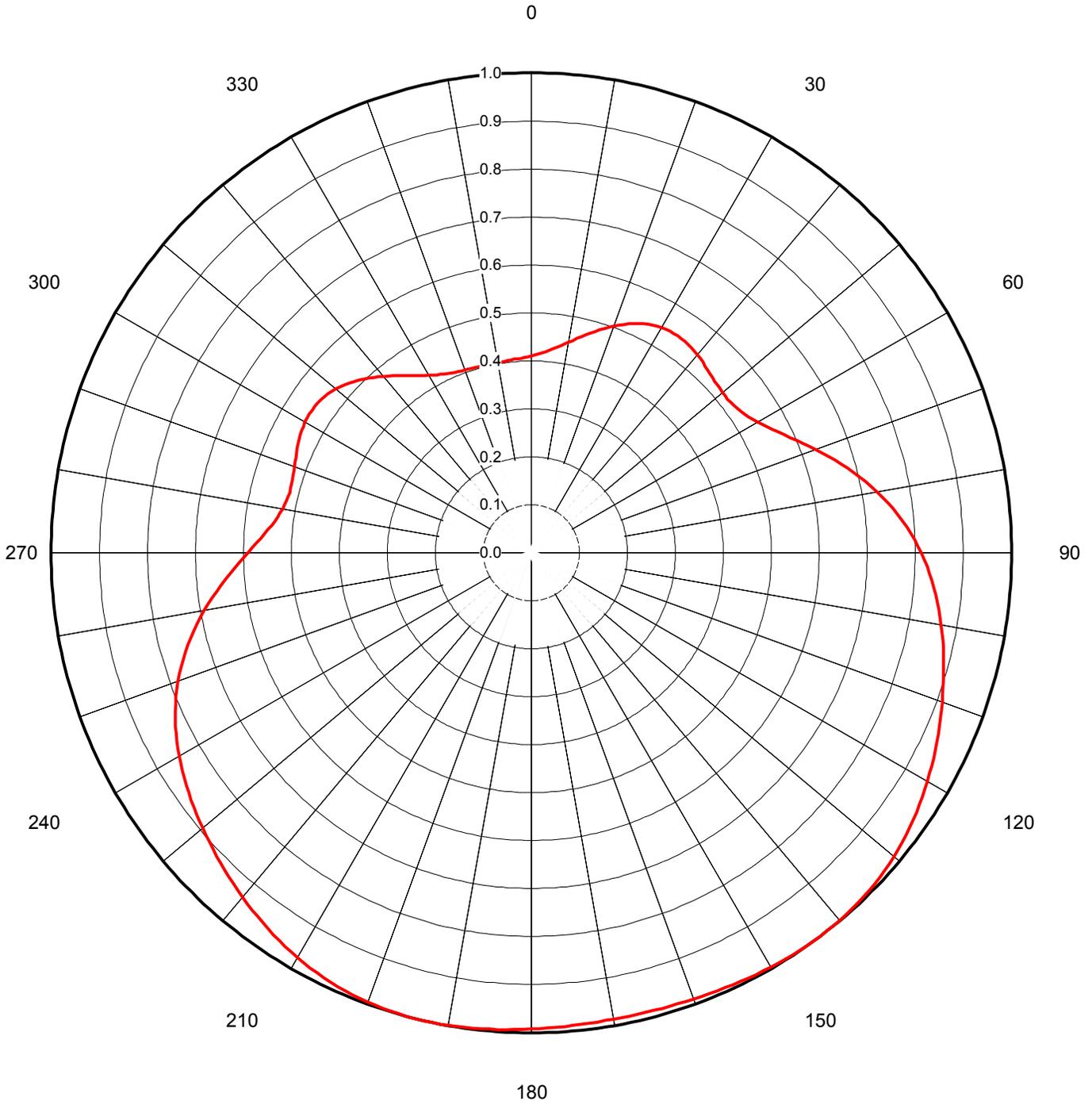
### AZIMUTH PATTERN

Gain **1.80**  
Calculated / Measured

**( 2.55 dB)**  
**Calculated**

Frequency  
Drawing #

**629.00 MHz**  
**TFU-3S180-40**





Proposal Number  
Date  
Call Letters  
Location  
Customer  
Antenna Type

**WTVQ-DT**  
**Lexington, KY**

Revision: **1**  
Channel **40**

**TFU-30DSC-R 3S180 DC**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>22.00 ( 13.42 dB )</b>	Beam Tilt	<b>0.75 deg</b>
RMS Gain at Horizontal	<b>14.00 ( 11.46 dB )</b>	Frequency	<b>629.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>20Q22075H-90</b>

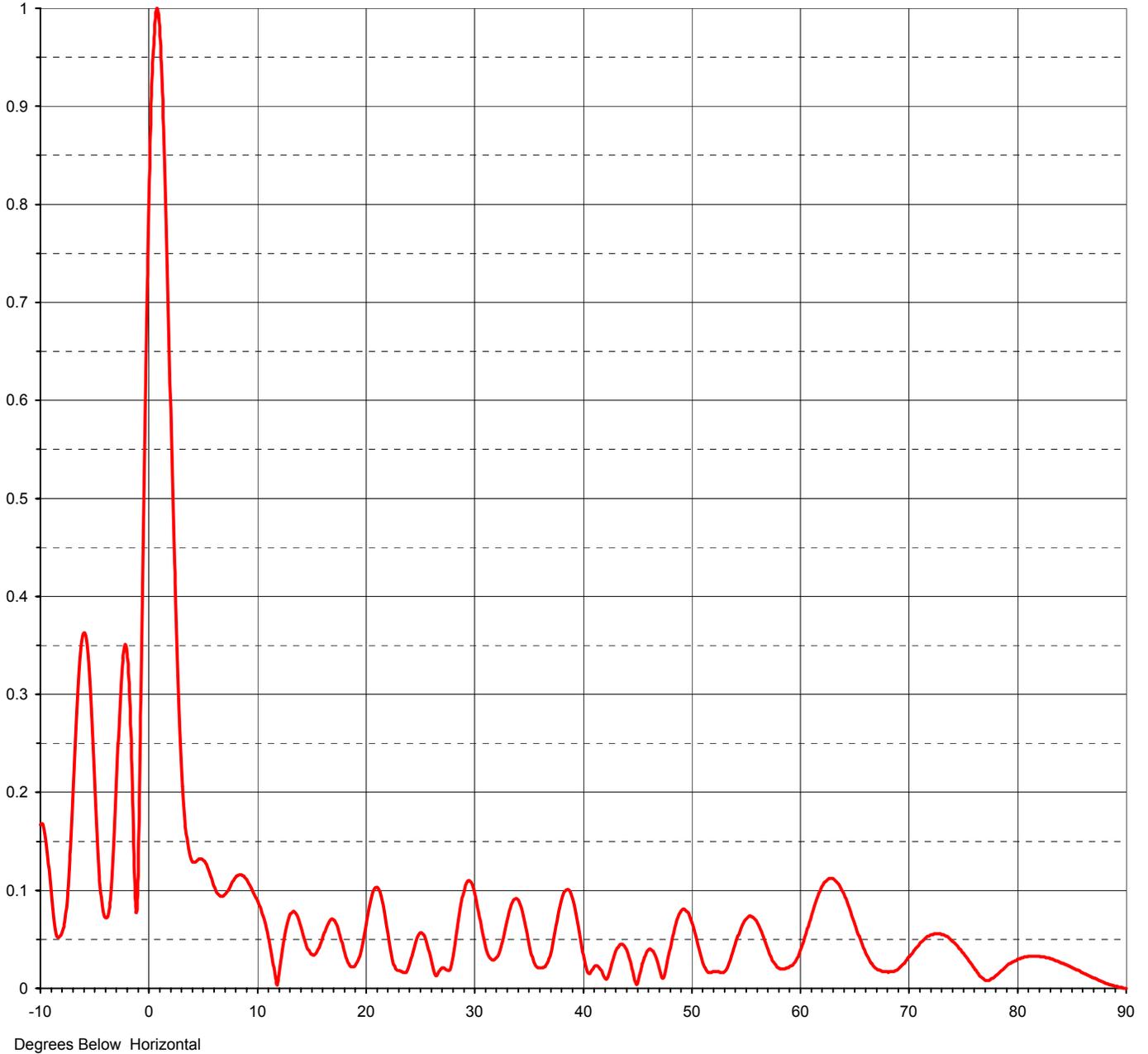
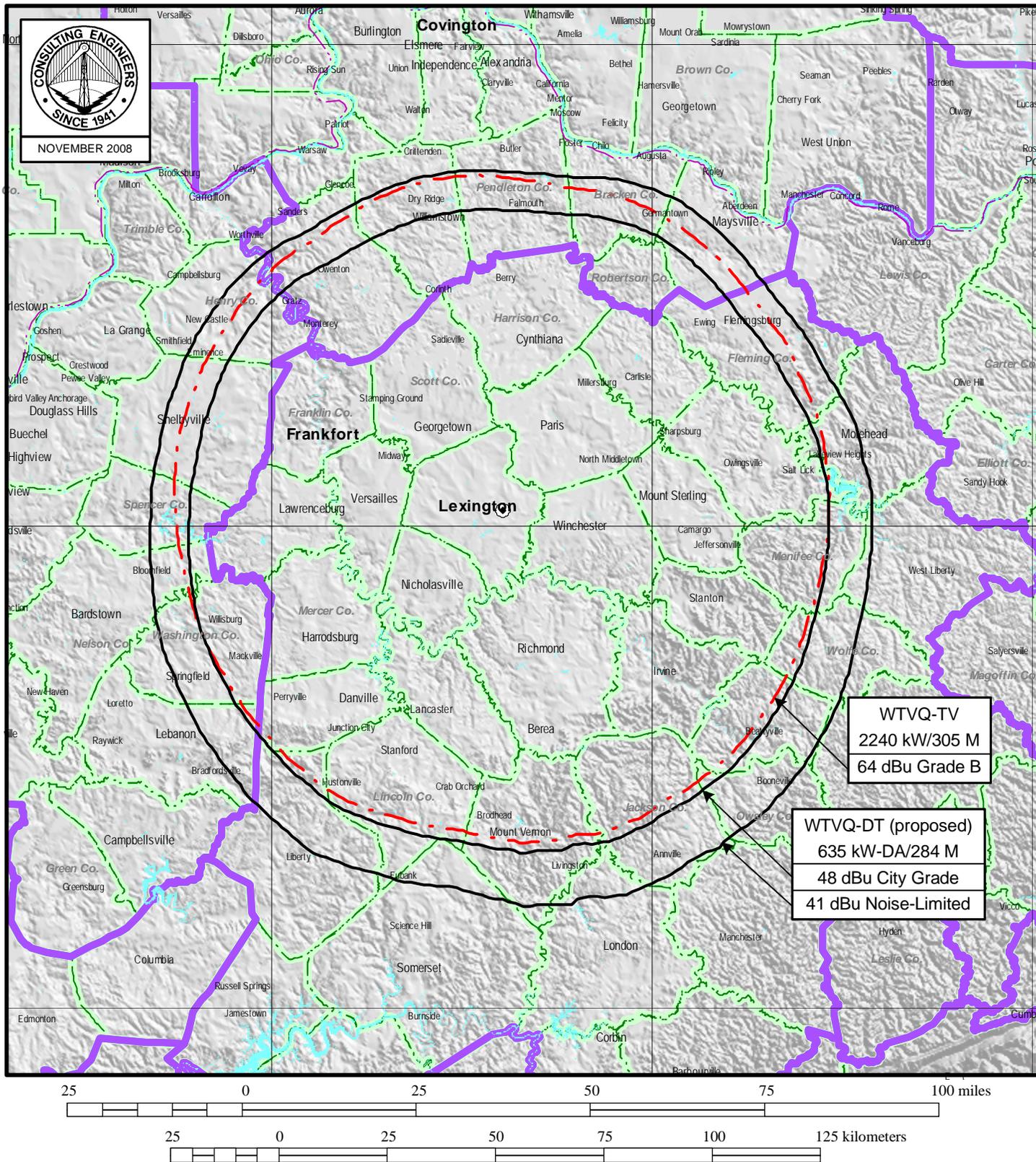


Figure 3



## PREDICTED COVERAGE CONTOURS

STATION WTVQ-DT

LEXINGTON, KENTUCKY

CH 40 635 KW (MAX-DA) 284 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

Figure 4

Channel	Callsign	Application Reference Number	Status	City	State	Scenario	Baseline	Net Change	Percentage	
38	WBQC-CA	BLTTA -20041221ABW	LIC	CINCINNATI	OH	No Interference				
39	WKOI-TV	BLCDT -20050920ABV	LIC	RICHMOND	IN	No Interference				
39	WKOI-TV	DTVPLN -DTVP1404	PLN	RICHMOND	IN	No Interference				
39	WKOI-TV	BPCDT -20080618ATM	APP	RICHMOND	IN	No Interference				
39	WKOI-TV	BPCDT -20080314ABK	CP	RICHMOND	IN	No Interference				
39	WLEX-TV	BMPCDT -20050728AOP	CP MOD	LEXINGTON	KY	No Interference				
39	WLEX-TV	DTVPLN -DTVP1406	PLN	LEXINGTON	KY	No Interference				
40	WFWA	BPEDT -20080617ADU	APP	FORT WAYNE	IN	No Interference				
40	WFWA	DTVPLN -DTVP1436	PLN	FORT WAYNE	IN	No Interference				
40	WFWA	BLEDT -20041112ACP	LIC	FORT WAYNE	IN	No Interference				
40	WHKY-TV	BLCDT -20060630ABW	LIC	HICKORY	NC	No Interference				
40	WHKY-TV	DTVPLN -DTVP1444	PLN	HICKORY	NC	No Interference				
40	WHKY-TV	BPCDT -20080619AAH	CP	HICKORY	NC	No Interference				
40	WHIZ-TV	BMPCDT -20071022BPE	CP MOD	ZANESVILLE	OH		1	726768	2728	0.375
40	WHIZ-TV	DTVPLN -DTVP1449	PLN	ZANESVILLE	OH		1	792448	3834	0.484
40	WDSI-TV	BLCDT -20051011ABS	LIC	CHATTANOOGA	TN		11	873424	211	0.024
40	WDSI-TV	DTVPLN -DTVP1452	PLN	CHATTANOOGA	TN		11	873424	211	0.024
40	WLFB	BPCDT -20080317AIS	CP	BLUEFIELD	WV		11	678444	236	0.035
40	WLFB	DTVPLN -DTVP1459	PLN	BLUEFIELD	WV		21	720799	1156	0.160
41	WHIO-TV	BPCDT -20080619ACK	APP	DAYTON	OH	No Interference				
41	WHIO-TV	DTVPLN -DTVP1480	PLN	DAYTON	OH	No Interference				
41	WHIO-TV	BLCDT -20040614AEY	LIC	DAYTON	OH	No Interference				
41	WETP-TV	BLEDT -20050916AAX	LIC	SNEEDVILLE	TN	No Interference				
41	WETP-TV	DTVPLN -DTVP1484	PLN	SNEEDVILLE	TN	No Interference				
41	WCHS-TV	BLCDT -20050621AAQ	LIC	CHARLESTON	WV	No Interference				
41	WCHS-TV	DTVPLN -DTVP1489	PLN	CHARLESTON	WV	No Interference				
40	WTVQ-TV	USERRECORD-01	APP	LEXINGTON	KY	Cannot calculate worst case for station				