

TECHNICAL EXHIBIT  
MINOR MODIFICATION APPLICATION  
STATION WAOE-DT (FACILITY ID 52280)  
PEORIA, ILLINOIS

DECEMBER 5, 2006

CH 39 26 KW 212 M

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Technical Narrative

This Technical Exhibit supports a minor modification application for digital television station WAOE-DT on channel 39 at Peoria, Illinois. Station WAOE-DT is authorized (CP) to operate on digital channel 39 with a non-directional antenna effective radiated power (ERP) of 39 kilowatts (kW) and an antenna height above average terrain (HAAT) of 190 meters (BMPCDT-20060323ACF).

Proposed Facilities

The existing tower structure cannot structurally support the proposed (separate) WAOE antenna and therefore WAOE is now proposing to share the top-mounted panel antenna with station WEEK (TV/DTV). Therefore, this minor modification application proposes to increase antenna height and reduce ERP. There is no proposed change in channel (39), site coordinates or city of license (Peoria).

The site coordinates remain (NAD27): 40-37-46 N, 89-32-53 W. It is proposed to operate with a non-directional antenna ERP of 26 kW at an antenna HAAT of 212 meters. It is proposed to use an existing broadband Dielectric TUA-O4-16/64H-1-T-R antenna top-mounted on a 184 meter (604 foot) tower structure (see Figure 1). The FCC antenna structure registration number (ASRN) is 1008775.

The proposed facility will not result in any extension of the authorized noise-limited contour, as shown in Figure 2. Therefore, the proposal meets the terms of the FCC Filing Freeze for digital television stations.<sup>1</sup>

It is also noted in Figure 2 that the proposed City-Grade contour will encompass all of the city limits of Peoria (derived from 2000 U.S. Census information for Illinois).

### Allocation Considerations

The proposed WAOE-DT operation meets the FCC's interference standards to pertinent analog (NTSC) and DTV assignments using the procedures outlined in the FCC's OET-69 Bulletin and a 2 kilometer grid cell size. The proposed WAOE-DT operation complies with the FCC's "de minimis" interference policy with respect to pertinent Class A TV assignments. If necessary, a waiver of the FCC rules is requested with respect to use of the OET-69 interference procedures.

### Radiofrequency Electromagnetic Field Exposure

The proposed WAOE-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the master antenna is located 173.5 meters above ground level with an ERP of 26 kW. A conservative relative field value of 0.5 was assumed for the antenna calculation. The calculated power density at a point 2 meters above ground level will be 0.008 mW/cm<sup>2</sup>. This is less than 5% of the FCC's recommended limit of 0.42 mW/cm<sup>2</sup> for channel 39 for an "uncontrolled" environment.

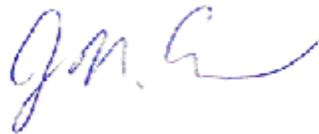
Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas

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<sup>1</sup> See August 2004 Filing Freeze PN, DA 04-2446 (MB released Aug. 3, 2004).

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.

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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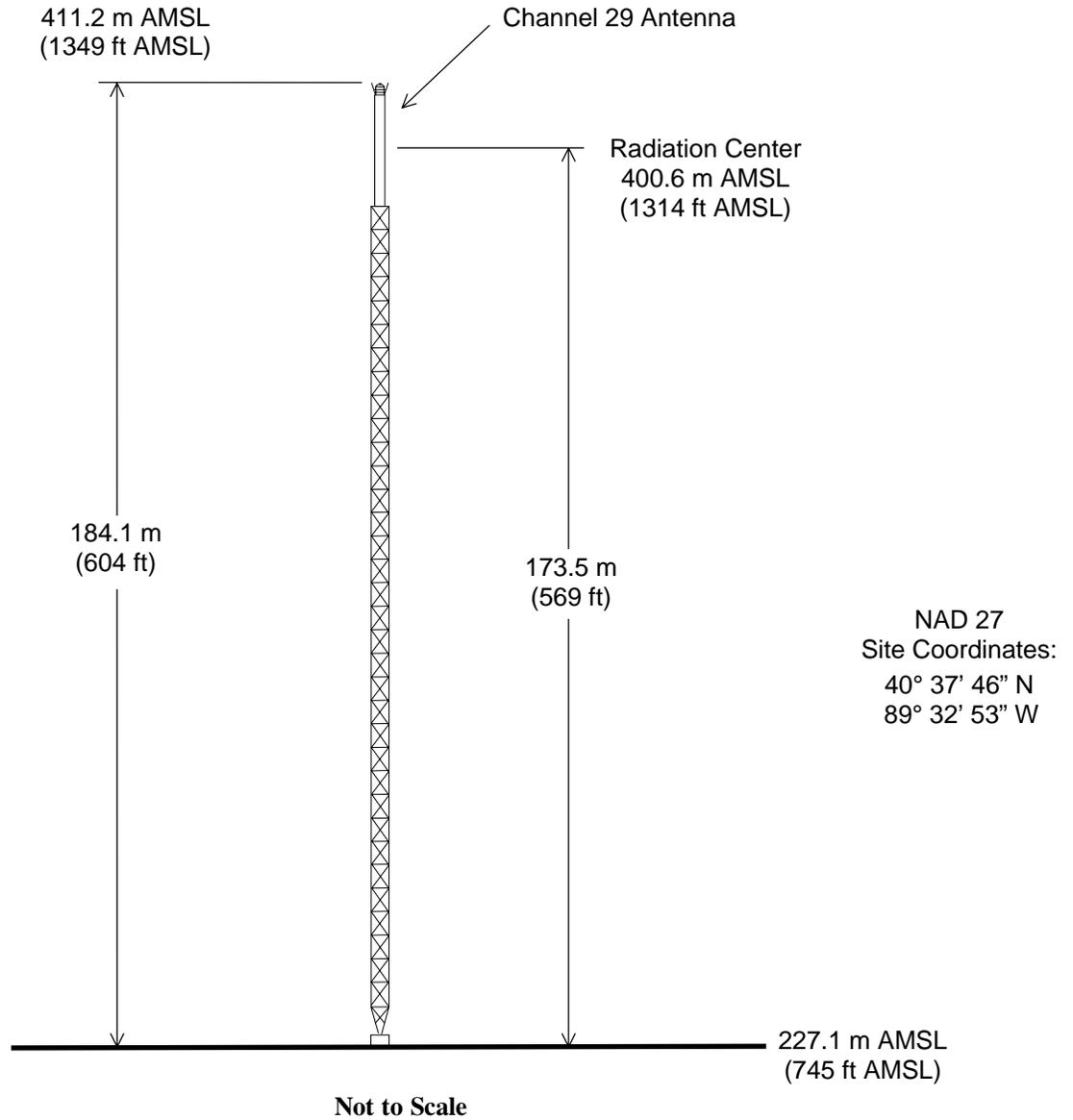
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WAOE-DT RF Transmission System Specifications

| Description   | System   |
|---|----------|
| Transmitter Power Output (1.0 kW):                                      | 0.0 dBk  |
| Transmission Line to Combiner Loss (96% eff.)<br>(1 5/8" foam) 30 feet: | 0.19 dB  |
| Combiner Insertion Loss:  | 0.25 dB  |
| Tower Transmission Line Loss (88.6% eff.)<br>(7 3/16" EHT) 500 feet:    | 0.53 dB  |
| DIE TUA-04-16/64H-1-T-R<br>(32.4 RMS Power Gain):                       | 15.1 dB  |
| Effective Radiated Power (26 kW):                                       | 14.1 dBk |



Registration No. 1008775



## ANTENNA AND SUPPORTING STRUCTURE

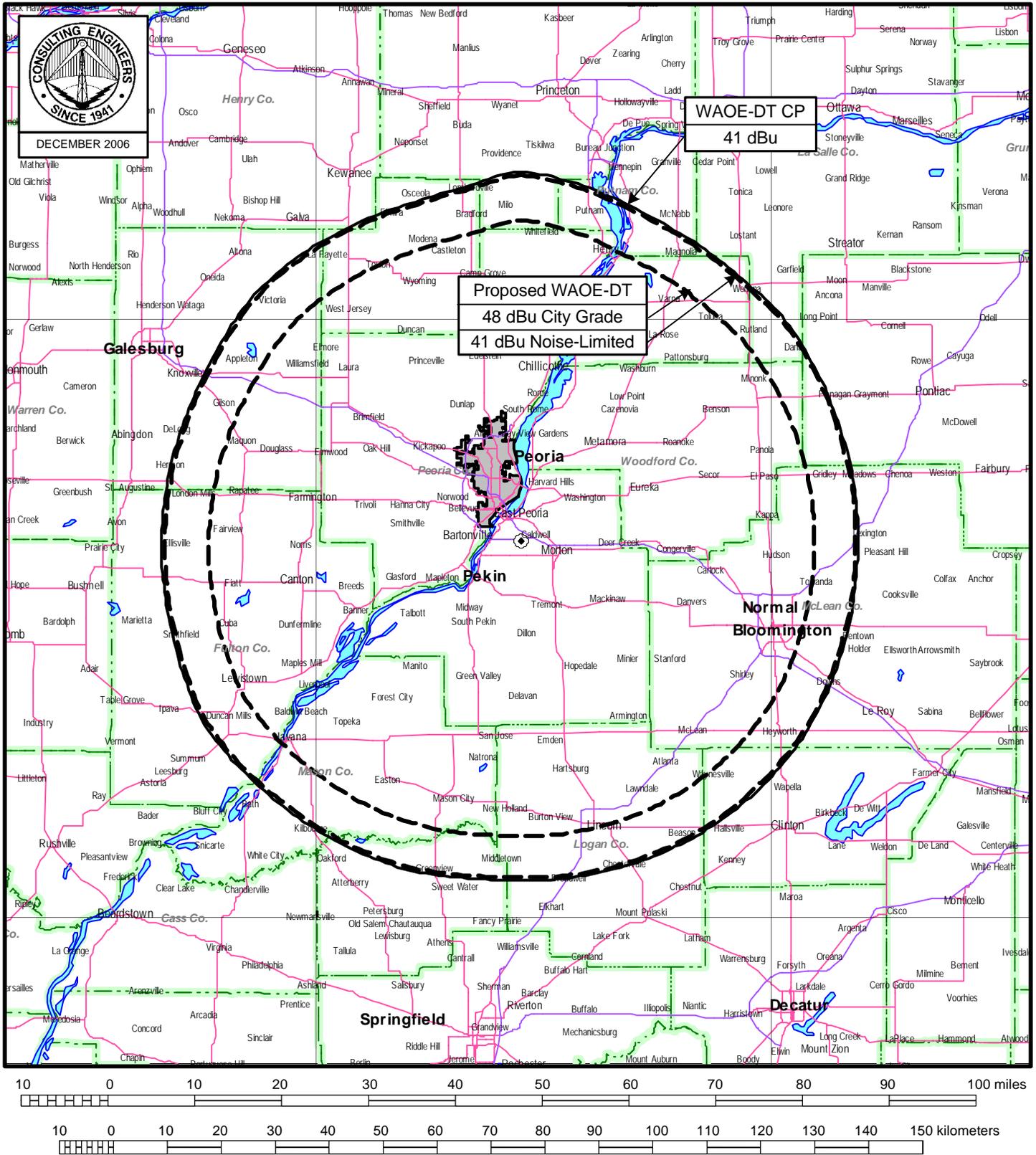
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Figure 2



**PREDICTED COVERAGE CONTOURS**

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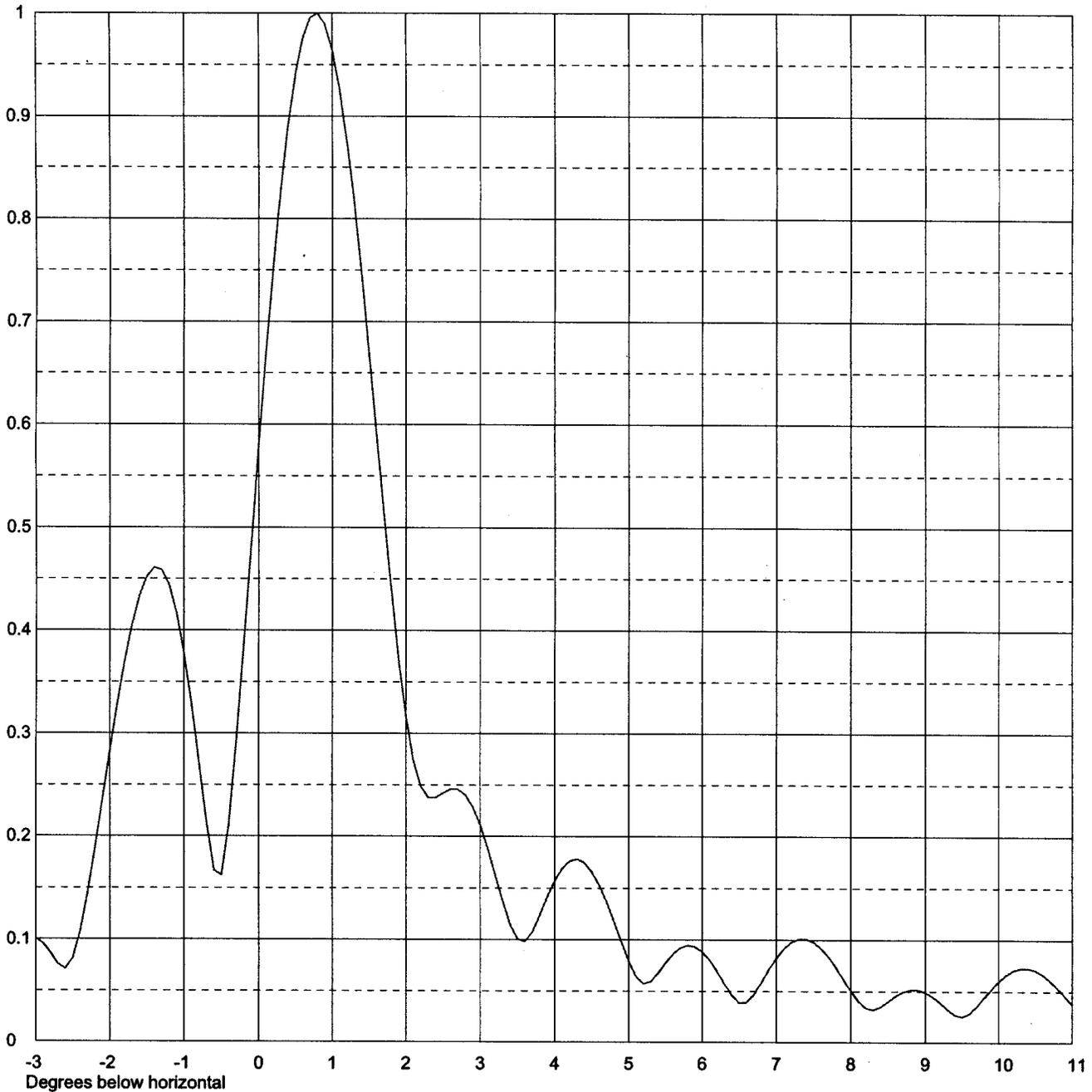
## ELEVATION PATTERN

RMS Gain at Main Lobe  
RMS Gain at Horizontal  
Calculated / Measured

**32.4 (15.11 dB)**  
**10.9 (10.37 dB)**  
**Calculated**

Beam Tilt  
Frequency  
Drawing #

**0.75 Degrees**  
**623.00 MHz**  
**16U324075-6230**



Remarks: