

TECHNICAL EXHIBIT  
MINOR CHANGE APPLICATION FOR  
MODIFICATION OF CONSTRUCTION PERMIT  
STATION KIMT-DT (FACILITY ID 66402)  
MASON CITY, IOWA

APRIL 18, 2006

CH 42    1000 KW-ND    463 M

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Technical Narrative

This Technical Exhibit supports a minor change application for modification of construction permit (CP) for digital television (DTV) station KIMT-DT at Mason City, Iowa (Facility ID 66402).

Station KIMT was allotted DTV channel 42 at its analog site (43-22-20, 92-49-59). The FCC assigned the channel 42 DTV allotment an effective radiated power (ERP) of 1000 kilowatts (kW) and antenna height above average terrain (HAAT) of 472 meters.

Station KIMT-DT is currently authorized to operate on channel 42 (BMPCDT-20000501ACT) with a non-directional (ND) antenna system. The ERP is 1000 kW and the antenna HAAT is 447 meters. The antenna center of radiation is 455 meters above ground level (AGL), and 831.1 meters above mean sea level (AMSL). The transmitter site coordinates are 43-22-20, 92-49-59 (NAD-27). The FCC antenna structure registration number is 1015912.

**Proposed DTV Facilities**

This minor change application to modify the CP proposes to relocate to a nearby tower and increase the antenna HAAT. It is proposed to use a Dielectric model TFU-30GTH-R-O4 non-directional antenna system. The proposed tower is 15.3 kilometers

northeast of the KIMT-DT CP site. The proposed site coordinates are 43-28-32, 92-42-29 (NAD-27). The proposed structure has been notified to the Federal Aviation Administration (FAA Study No. 2003-ACE-0693-OE), however, it has not yet been registered with the FCC. The proposed antenna will be mounted on the tower with the center of radiation 464.5 meters AGL, and 853.1 meters AMSL. The proposed antenna HAAT will be 463 meters. The ERP will remain at 1000 kW-ND. There is no proposed change in channel (42) or city of license (Mason City, IA).

Figure 1 is a sketch of the tower and antenna system.

Figure 2 is a map showing the predicted 41 dBu contour for the proposed KIMT-DT operation. The city limits of Mason City, Iowa are indicated. The predicted 48 dBu contour encompasses all of the land area within the Mason City limits. The estimated population (2000 Census) and land area within the predicted 41 dBu contour are 736,749 people and 39,280 square kilometers, respectively.

Figure 2 also shows the predicted 41 dBu contour for the KIMT DTV allotment operation (Ch.42, 1000 kW, 472 m).

Figure 3 shows the proposed antenna's vertical radiation pattern.

### **Allocation Study**

An interference study was conducted using the procedures outlined in the FCC's OET-69 Bulletin, a 1 kilometer grid, and the 1990 Census (current FCC processing method). The proposed KIMT-DT operation complies with the FCC's interference standards except with respect to station WKBT-DT on channel 41 at La Crosse, Wisconsin. Exhibit 42 contains the consent of WKBT-DT to the excessive interference.

There are no known AM, FM or TV stations within 5 kilometers (3.1 miles) of the proposed KIMT-DT site at this time. Non-commercial, educational station KYIN-DT on channel 18 at Mason City, Iowa (Facility ID 29086) will co-locate with KIMT-DT at the proposed site. No adverse electromagnetic interaction is expected from KIMT-DT's

proposed operation. The applicant recognizes its responsibility to correct prohibited interference problems that its proposed operation may create.

The KIMT-DT site is more than 510 kilometers from the closest point of the Canadian border. The KIMT-DT site is more than 1700 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Grand Island, Nebraska, 550 kilometers to the southwest. The closest point of the National Radio Quiet Zone (VA/WVA) is more than 1100 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1000 kilometers to the west. The closest radio astronomy site using channel 37 is at North Liberty, Iowa, approximately 211 kilometers to the southeast.

Calculations have been made concerning interference that the proposed KIMT-DT operation would receive. The calculations are based on the OET-69 procedures using a 2 kilometer grid and the 2000 Census. After consideration of terrain and interference, the proposed KIMT-DT operation would serve 696,873 people.

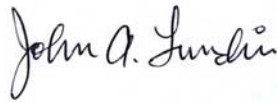
### **Radiofrequency Electromagnetic Field Exposure**

The proposed KIMT-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 proposed antenna is located 464.5 meters above ground level. The proposed ERP of 1000 kW is assumed. A relative field value of 0.15 was assumed for the antenna's downward radiation (see Figure 3). The calculated power density at a point 2 meters (6.6 feet) above ground level is  $0.003514 \text{ mW/cm}^2$ . This is less than 1% of the FCC's recommended limit of  $0.43 \text{ mW/cm}^2$  for channel 42 for an "uncontrolled" environment. The calculated power density is less than 1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting equipment will be restricted and appropriately marked with warning signs. 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.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

A handwritten signature in black ink that reads "John A. Lundin". The signature is written in a cursive style with a large initial 'J' and 'L'.

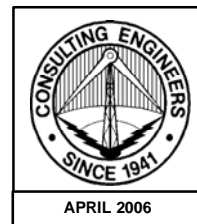
John A. Lundin

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April 18, 2006

Figure 1

FAA Study No: 2003-ACE-0693-OE



862.0 m AMSL  
(2828 ft)

473.4 m  
(1553 ft)

Radiation Center  
853.1 m AMSL  
(2799 ft)

464.5 m  
(1524 ft)

Site Coordinates:  
43°28'32"N  
92°42'29"W  
(NAD-27)

388.6 m AMSL  
(1275 ft)

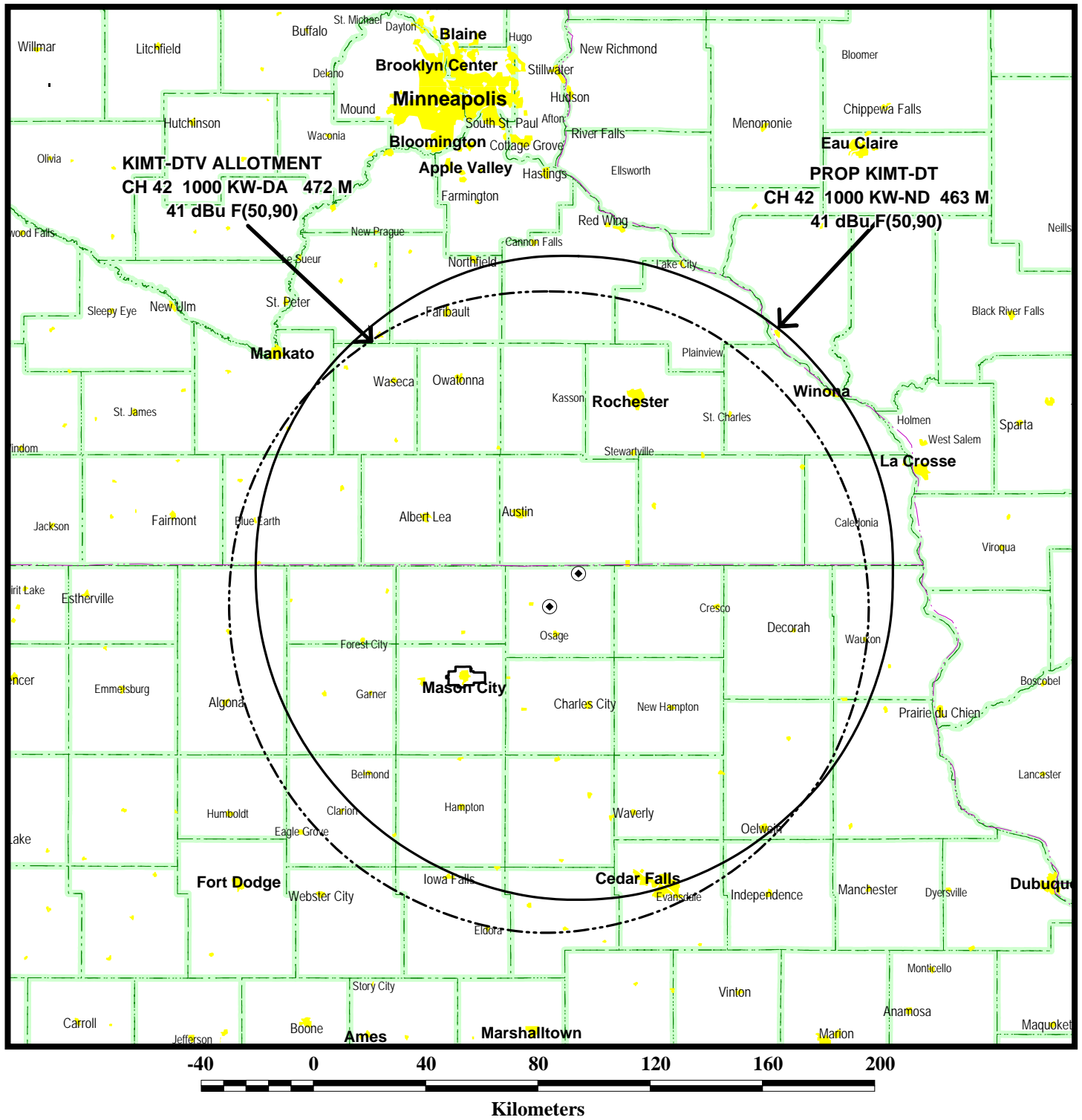
Not to Scale

## PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION KIMT-DT  
MASON CITY, IOWA  
CH 42 1000 KW-ND 463 M

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

Figure 2



## PREDICTED DTV COVERAGE CONTOURS

STATION KIMT-DT  
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du Treil, Lundin & Rackley, Inc. Sarasota, Florida

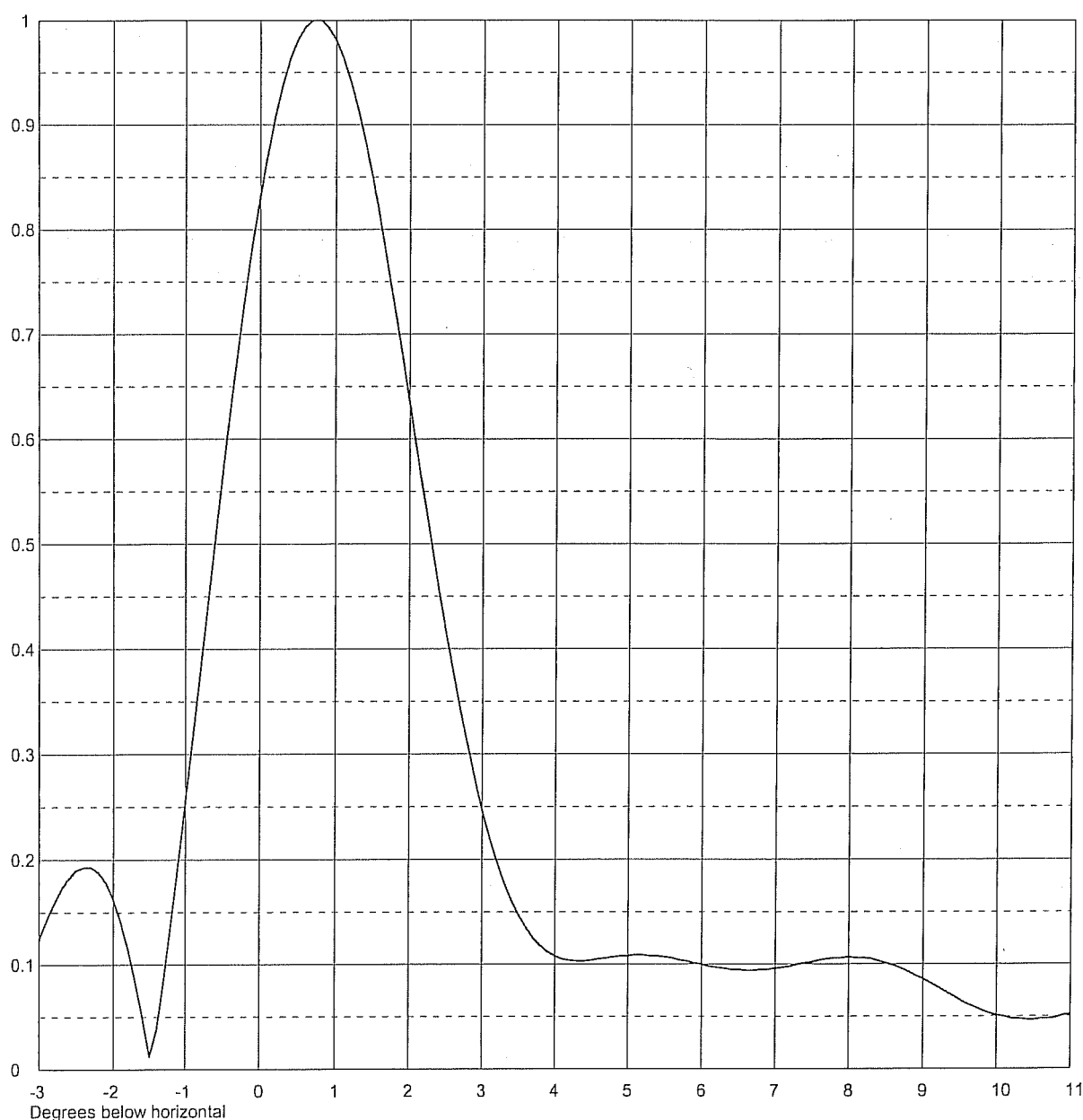




Date	17 Apr 2006	
Call Letters	KIMT-DT	Channel 42
Location	Mason City, IA	
Customer	Media General	
Antenna Type	TFU-30GTH O4	

### ELEVATION PATTERN

RMS Gain at Main Lobe	27.0 (14.31 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	18.7 (12.72 dB)	Frequency	641.00 MHz
Calculated / Measured	Calculated	Drawing #	30G270075





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Calculated / Measured	Calculated	Drawing #	30G270075-90

