

TECHNICAL EXHIBIT  
AMENDMENT TO THE APPLICATION  
FOR CONSTRUCTION PERMIT  
STATION WPPX-DT (FACILITY ID 51984)  
WILMINGTON, DELAWARE

MARCH 27, 2001

CH 31 200 KW (MAX-DA) 374 M

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Table of Contents

	Technical Narrative
Figure 1	Tower Sketch
Figure 2	Antenna Patterns
Figure 3	Coverage Map
Figure 4	Technical Specifications

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Technical Narrative

This Technical Exhibit supports an amendment to the application for construction permit for digital television (DTV) station WPPX-DT on channel 31 at Wilmington, Delaware. Station WPPX-DT has an application pending to operate with a maximum directional DTV effective radiated power (ERP) of 200 kW and an antenna HAAT of 381 meters (BPCDT-19990311KE).

Proposed Facilities

This amendment proposes ONLY to (1) rotate the currently proposed directional antenna 10 degrees clockwise and (2) re-locate the proposed transmitter site based on updated tower information, from the application on file. Due to minor changes in the proposed tower location and elevation data, the tower owner has recently filed for approval with the Federal Aviation Administration (FAA) in March 2001. At this time, an Aeronautical Study Number has not yet been assigned. When one is made available and a *Determination of No Hazard* is issued, the tower owner will register the proposed structure with the FCC.

This minor amendment proposes changes to FCC form 301, Section III-D, questions 3 (site coordinates), 5-8 (antenna height data), 10e (relative field values), 12 (coverage map) and 13 (RFR analysis). Operation at the new coordinates (coordinates: 40-02-30 N, 75-14-11 W) with a maximum directional ERP of 200 kW and antenna HAAT of 374 meters is hereby proposed.

The proposed transmitter site is approximately 419 kilometers from the closest point of the Canadian border. The site is more than 2,300 kilometers from the closest point of

the Mexican border. The closest FCC monitoring station is at Laurel, Maryland, approximately 167 kilometers to the southwest. The closest point of the National Radio Quiet Zone (VA/WV) is approximately 293 kilometers to the west-southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,500 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Hancock, New Hampshire, approximately 420 kilometers to the northeast. These separations are sufficient to not be a concern for coordination purposes.

### Allocation Study

Interference calculations have been made using the procedures outlined in the FCC's OET-69 bulletin, using a **1 kilometer grid spacing**. The pending WPPX-DT application appears to cause excessive interference to the application for DTV station WSWB-DT. As shown in the table below, this proposal will reduce the interference caused to the WSWB-DT application.

NTSC/DTV Station	FCC Baseline	Proposed UNIQUE Interference
WSWB-DT(App), DTV-14, Scranton, PA	853,000	16,953 (2.0%)

The proposed WPPX-DT operation does not cause prohibitive interference to any other analog or DTV assignments and therefore complies with the FCC's 2%/10% interference standard.

### Class A Consideration

The FCC's CDBS and its list of low power television (LPTV) assignments eligible for Class A status has been reviewed for potential impact. Interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin. The proposed WPPX-DT operation does not cause any calculated interference to any current or potential Class A station. If necessary, a waiver of the FCC rules is requested based on use of the FCC's OET-69 procedures to demonstrate no interference to LPTV assignments requesting Class A status.

Radiofrequency Electromagnetic Field Exposure

The proposed WPPX-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 DTV antenna is located 349.6 meters above ground level. The maximum DTV ERP is 200 kW. A conservative relative field value of 0.1 was assumed for the antenna's downward radiation (see Figure 2C). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0006 mW/cm<sup>2</sup>. This is less than 1% of the FCC's recommended limit of 0.38 mW/cm<sup>2</sup> for channel 31 for an "uncontrolled" environment.

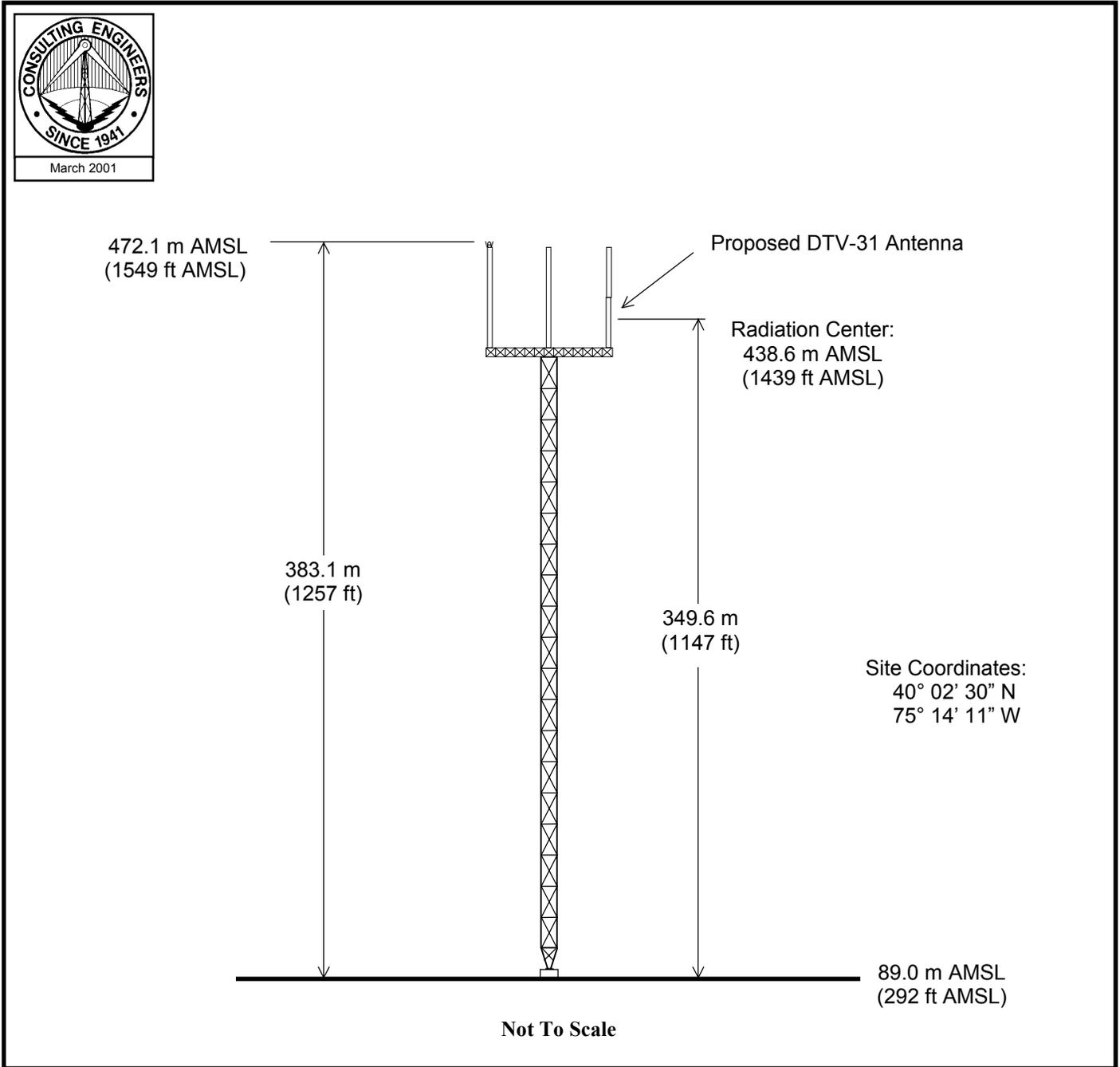
Access to the transmitting site will be restricted and appropriately marked with warning signs. As this will be a multi-user site, an agreement will be in effect with the other stations to control access to the site. In the event that workers or other authorized personnel enter restricted areas or climb 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 WPPX-DT operation appears to be otherwise categorically excluded from environmental processing.

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

Jonathan N. Edwards

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Sarasota, Florida 34237  
(941) 329-6000

March 27, 2001



**ANTENNA AND SUPPORTING STRUCTURE**

STATION WPPX-DT

WILMINGTON, DELAWARE

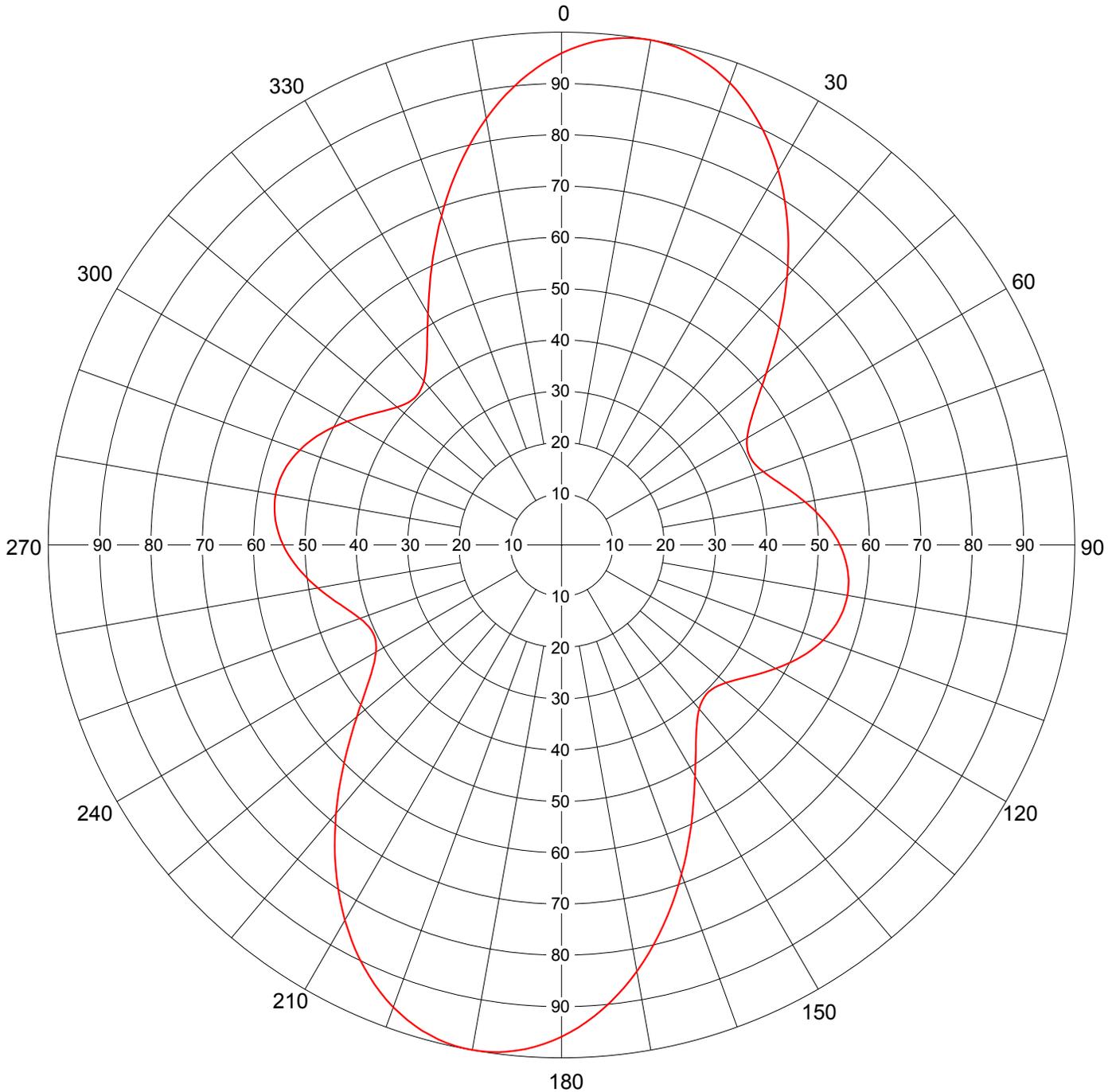
CH 31 200 KW (MAX-DA) 374 M

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

Date **27 Mar 2001**  
Call Letters **WPPX-DT** Channel **31**  
Location **Wilmington, DE**  
Customer  
Antenna Type **TFU-20DSC-R P230**

### AZIMUTH PATTERN

RMS Gain at Main Lobe **2.30 (3.62 dB)** Frequency **575 MHz**  
Calculated / Measured **Calculated** Drawing # **TFU-P230**



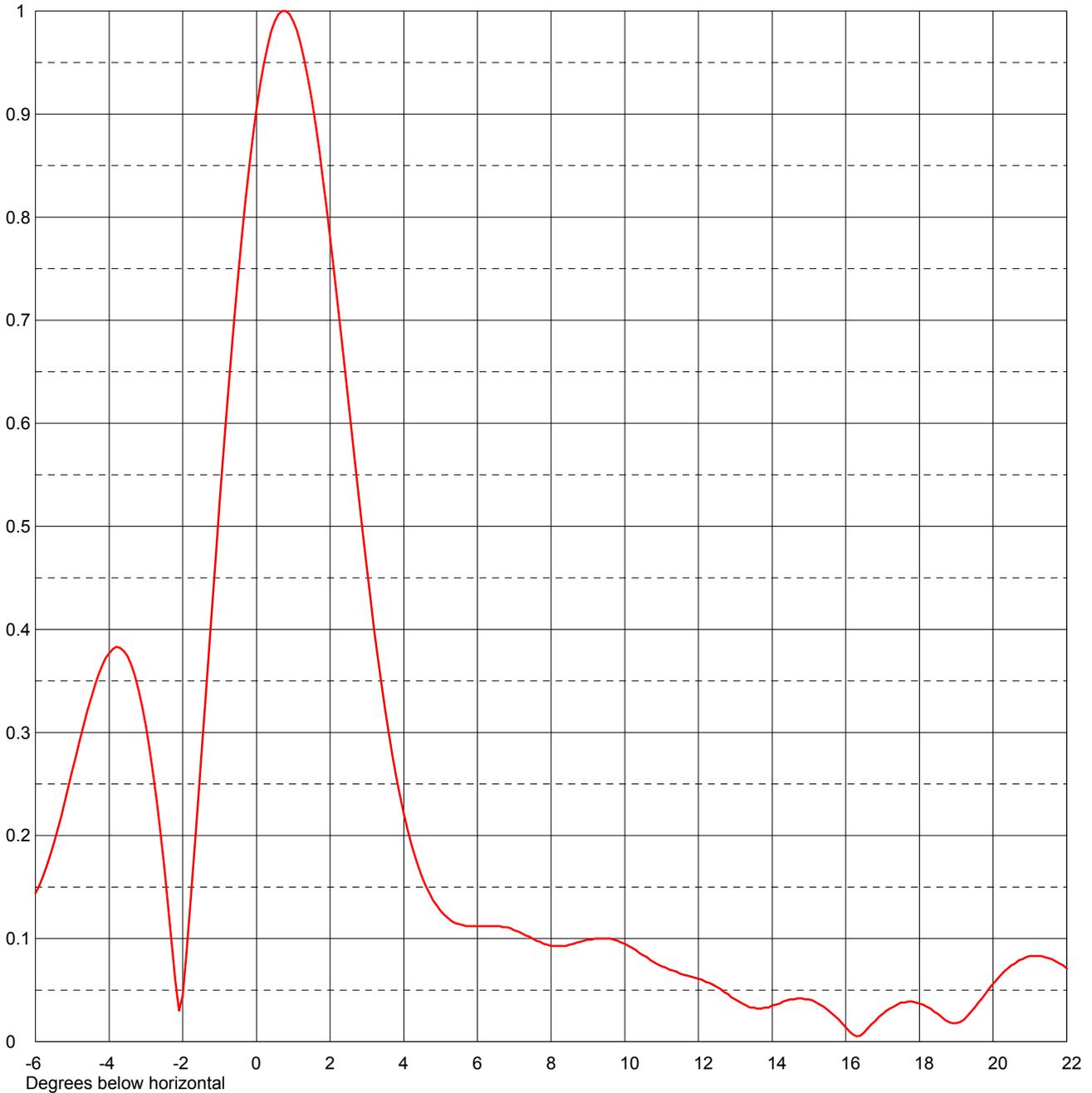
Remarks:



Date **27 Mar 2001**  
Call Letters **WPPX-DT** Channel **31**  
Location **Wilmington, DE**  
Customer  
Antenna Type **TFU-20DSC-R P230**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>17.0 (12.30 dB)</b>	Beam Tilt	<b>0.75 Degrees</b>
RMS Gain at Horizontal	<b>13.9 (11.43 dB)</b>	Frequency	<b>575.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>20Q170075</b>



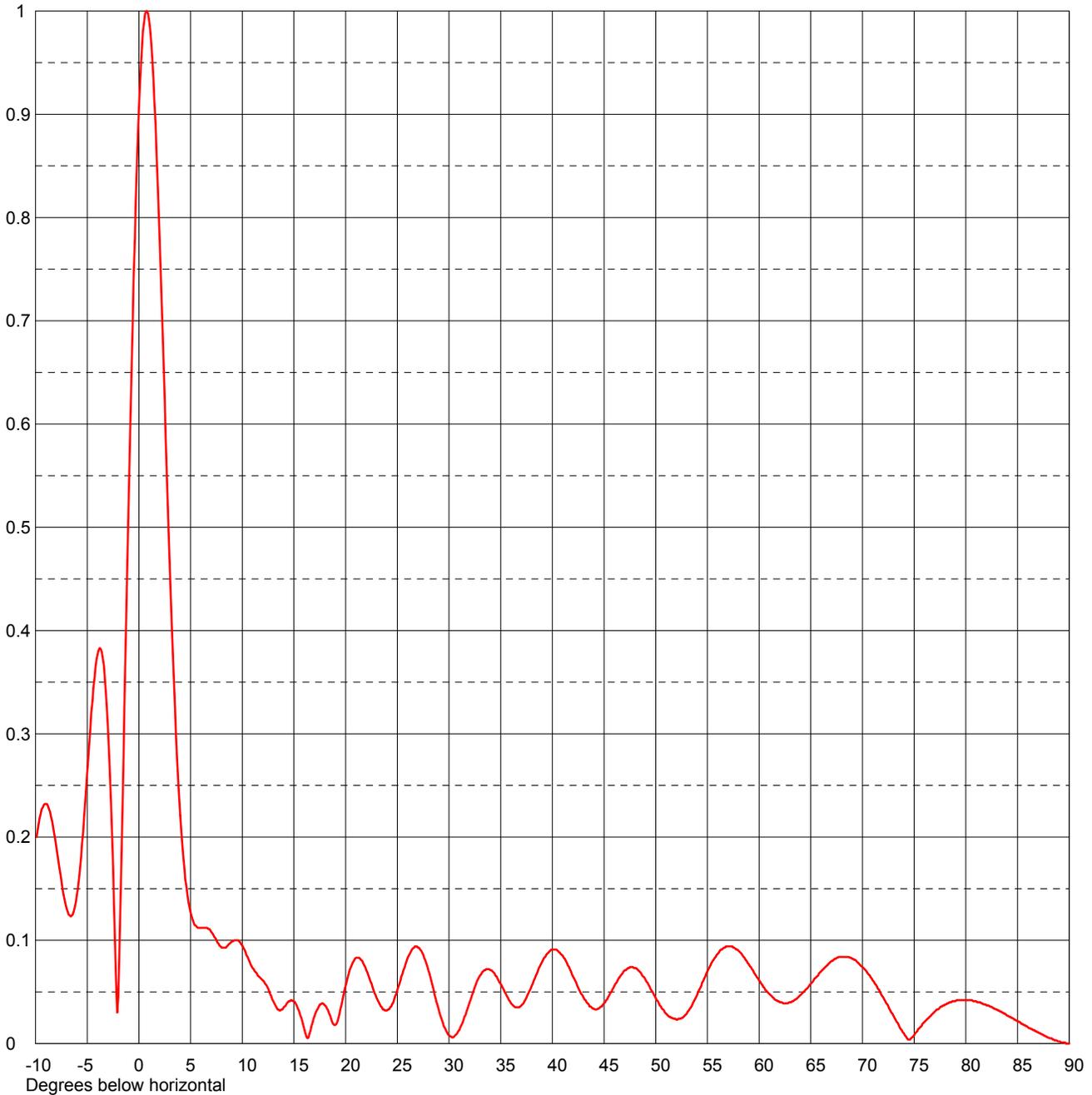
Remarks:



Date **27 Mar 2001**  
Call Letters **WPPX-DT** Channel **31**  
Location **Wilmington, DE**  
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Antenna Type **TFU-20DSC-R P230**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>17.0 (12.30 dB)</b>	Beam Tilt	<b>0.75 Degrees</b>
RMS Gain at Horizontal	<b>13.9 (11.43 dB)</b>	Frequency	<b>575.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>20Q170075-90</b>



Remarks:

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Technical Specifications

Channel	31
Frequency	572-578 MHz
Proposed Site Coordinates (NAD 27)	40° 02' 30" North Latitude 75° 14' 11" West Longitude
Site Elevation above mean sea level	89.0 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	65 m
Overall height of antenna structure	
Above ground	383.1 m
Above mean sea level	472.1 m
Height of antenna radiation center	
Above ground	349.6 m
Above mean sea level	438.6 m
Above average terrain	374 m
Transmitter rated power output (average)	10 kW
Transmission line	Dielectric 562174
Length	(1,250 ft) 381 m
Efficiency (2.02 dB loss)	62.8 %
Antenna	Dielectric TFU-20DSC-R P230
Polarization	Horizontal
Peak Power Gain	39.1
Beam Tilt	0.75±
Main Lobes	10° & 190° T

Proposed Operation

Transmitter output power (average)	8.15 kW
Transmission line loss	3.03 kW
Antenna input power	5.12 kW
Maximum Effective Radiated Power (MAX-DA)	200 kW