

TECHNICAL EXHIBIT  
APPLICATION FOR MINOR CHANGE  
MODIFICATION OF DTV CONSTRUCTION PERMIT  
STATION WPXP-DT (FACILITY ID 27290)  
LAKE WORTH, FLORIDA

APRIL 23, 2002

CH 36    1000 KW (MAX-DA)    385 M

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Technical Narrative

This Technical Exhibit supports a minor change application to modify the construction permit (CP) for digital television (DTV) station WPXP-DT at Lake Worth, Florida. Station WPXP(TV) currently operates on analog (NTSC) channel 67. The WPXP-DT construction permit (BPCDT-19991027ADA, Facility ID 27290) authorizes a DTV operation on channel 36, the channel allotted by the Federal Communications Commission (FCC) to WPXP for DTV use. The WPXP-DT CP is based on use of a directional antenna (DA) system and maximum effective radiated power (ERP) of 1000 kilowatts (kW). The antenna height above average terrain (HAAT) is 398 meters. The transmitter site coordinates are 26-35-20, 80-12-44 (NAD-27). The FCC tower registration number for the supporting structure is 1220033.

Proposed DTV Facilities

This minor change application proposes to simply reduce the antenna height. There is no proposed change in channel number (36), city of assignment (Lake Worth, FL), directional antenna system (Dielectric TFU-26DSC-R-P230), antenna pattern, ERP (1000 kW-DA), transmitter site (26-35-20, 80-12-44), or supporting tower (1220033).

It is proposed to mount the Dielectric TFU-26DSC-R-P230 directional antenna system 12.5 meters (41 feet) below the height specified in the CP. The proposed antenna center of radiation will be 384.6 meters above ground level (AGL), 390.1 meters above mean sea level (AMSL). The proposed antenna HAAT will be 385 meters.

The WPXP transmitter site is more than 1600 kilometers from the closest point of the Canadian border. The WPXP site is more than 800 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Vero Beach, Florida, approximately 120 kilometers to the north-northwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 1200 kilometers to the north. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2700 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at Green Bank, West Virginia, approximately 1300 kilometers to the north. These separations are considered sufficient to not be a coordination concern.

#### Allocation Study

There is no proposed change in site from that authorized in the WPXP-DT CP. Nor are there proposed changes in ERP or antenna pattern. The only pertinent change is a reduction in the antenna HAAT (from 398 m to 385 m). Hence, no adverse allocation impact is expected. Interference calculations have been made to analog (NTSC) and DTV stations and allotments using the procedures outlined in the FCC's OET-69 Bulletin and a 2 kilometer grid spacing. The proposed WPXP-DT operation does not cause excessive calculated interference to any analog or DTV assignment or allotment.

#### Radiofrequency Electromagnetic Field Exposure

The proposed WPXP-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 384.6 meters above ground level. The maximum DTV ERP is 1000 kW. A relative field value of 0.2 was assumed for the antenna's

downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is  $0.0091 \text{ mW/cm}^2$ . This is less than 3% of the FCC's recommended limit of  $0.4 \text{ mW/cm}^2$  for channel 36 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 site will be restricted and appropriately marked with warning signs. As this is a multi-user site an agreement will control 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 WPXP-DT operation appears to be otherwise categorically excluded from environmental processing.

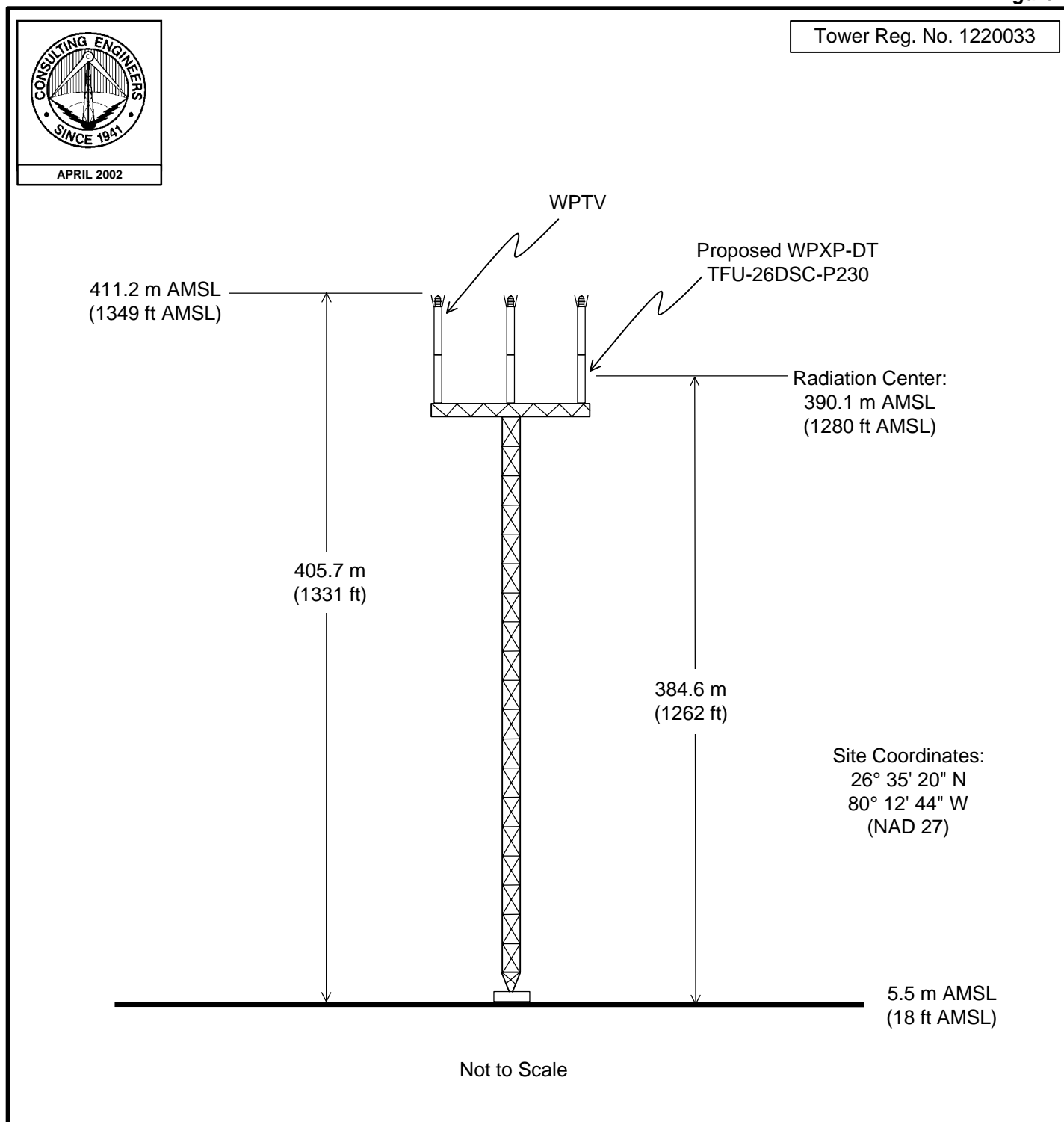
If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

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April 23, 2002

Figure 1



## **PROPOSED ANTENNA AND SUPPORTING STRUCTURE**

STATION WPXP-DT

LAKE WORTH, FLORIDA

CH 36 1000 KW (MAX-DA) 385 M

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

Date	23 Apr 2002
Call Letters	WPXP-DT Channel 36
Location	Lake Worth, FL
Customer	
Antenna Type	TFU-26DSC-R P230

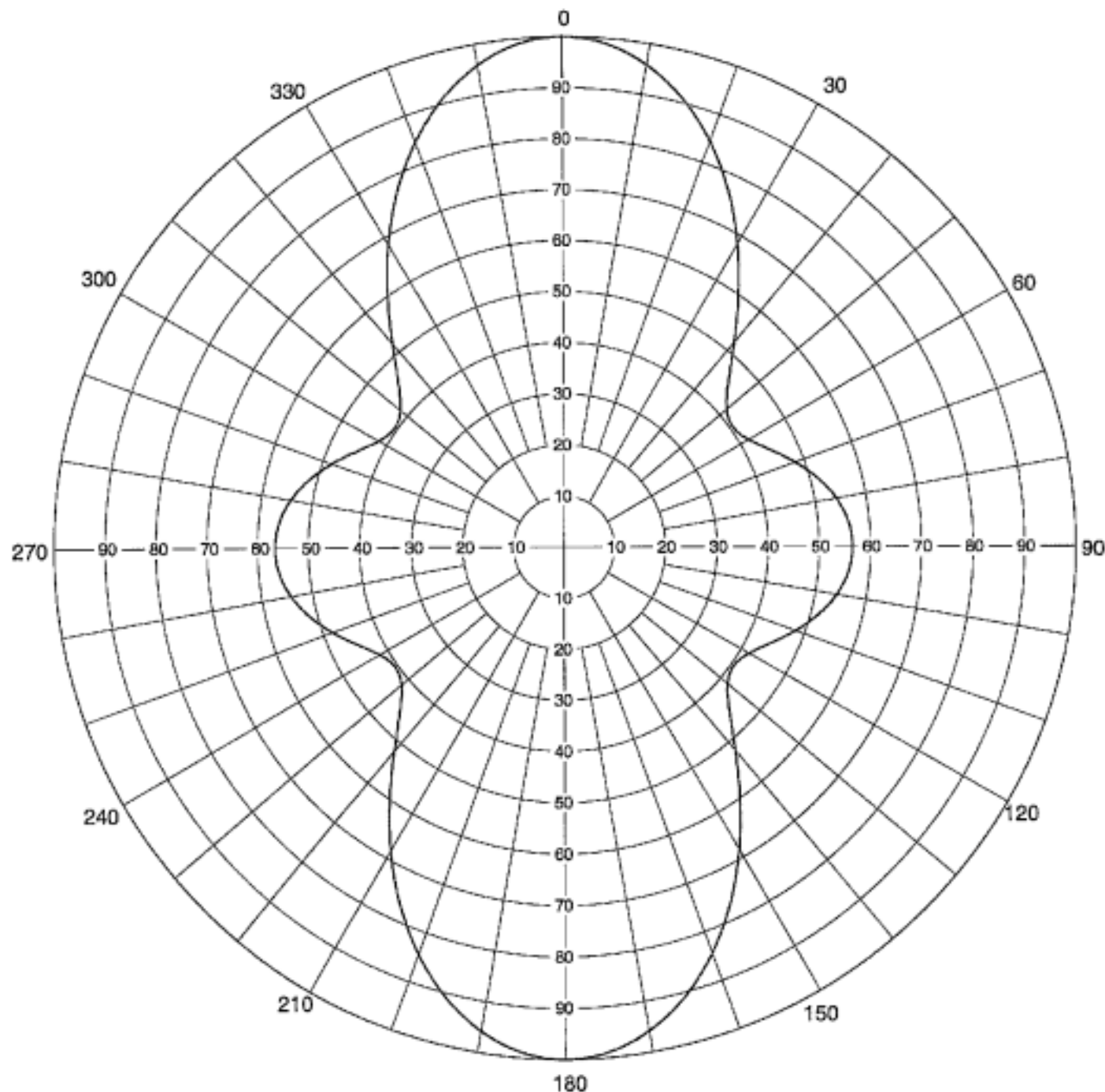
## AZIMUTH PATTERN

RMS Gain at Main Lobe  
Calculated / Measured

**2.30 (3.62 dB)**  
**Calculated**

Frequency  
Drawing #

**605 MHz**  
**TFU-P230**



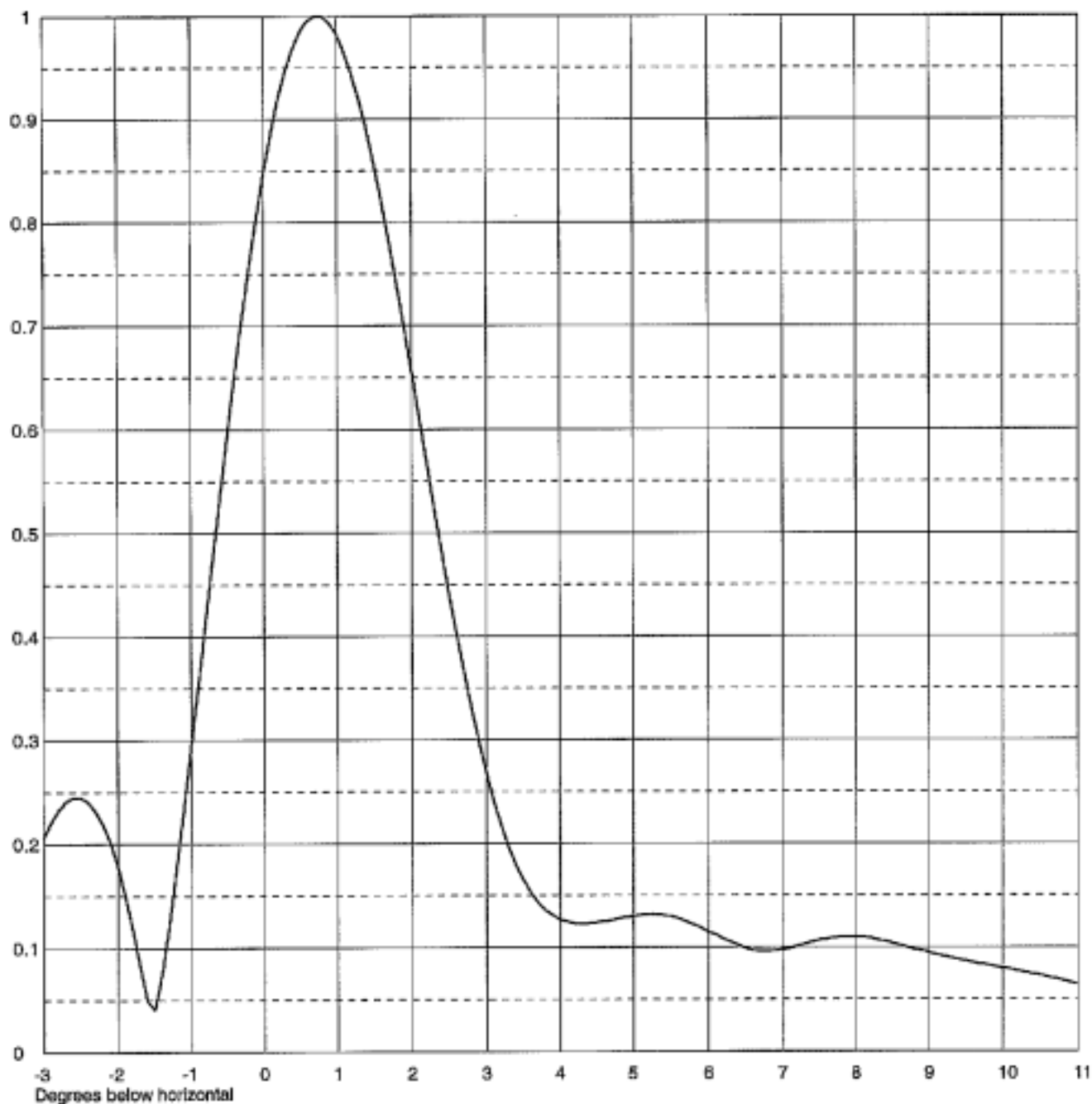
Remarks:



Date	23 Apr 2002		
Call Letters	WPXP-DT	Channel	36
Location	Lake Worth, FL		
Customer			
Antenna Type	TFU-26DSC-R P230		

### ELEVATION PATTERN

RMS Gain at Main Lobe	22.5 (13.52 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	16.1 (12.07 dB)	Frequency	605.00 MHz
Calculated / Measured	Calculated	Drawing #	26Q225075



Remarks:

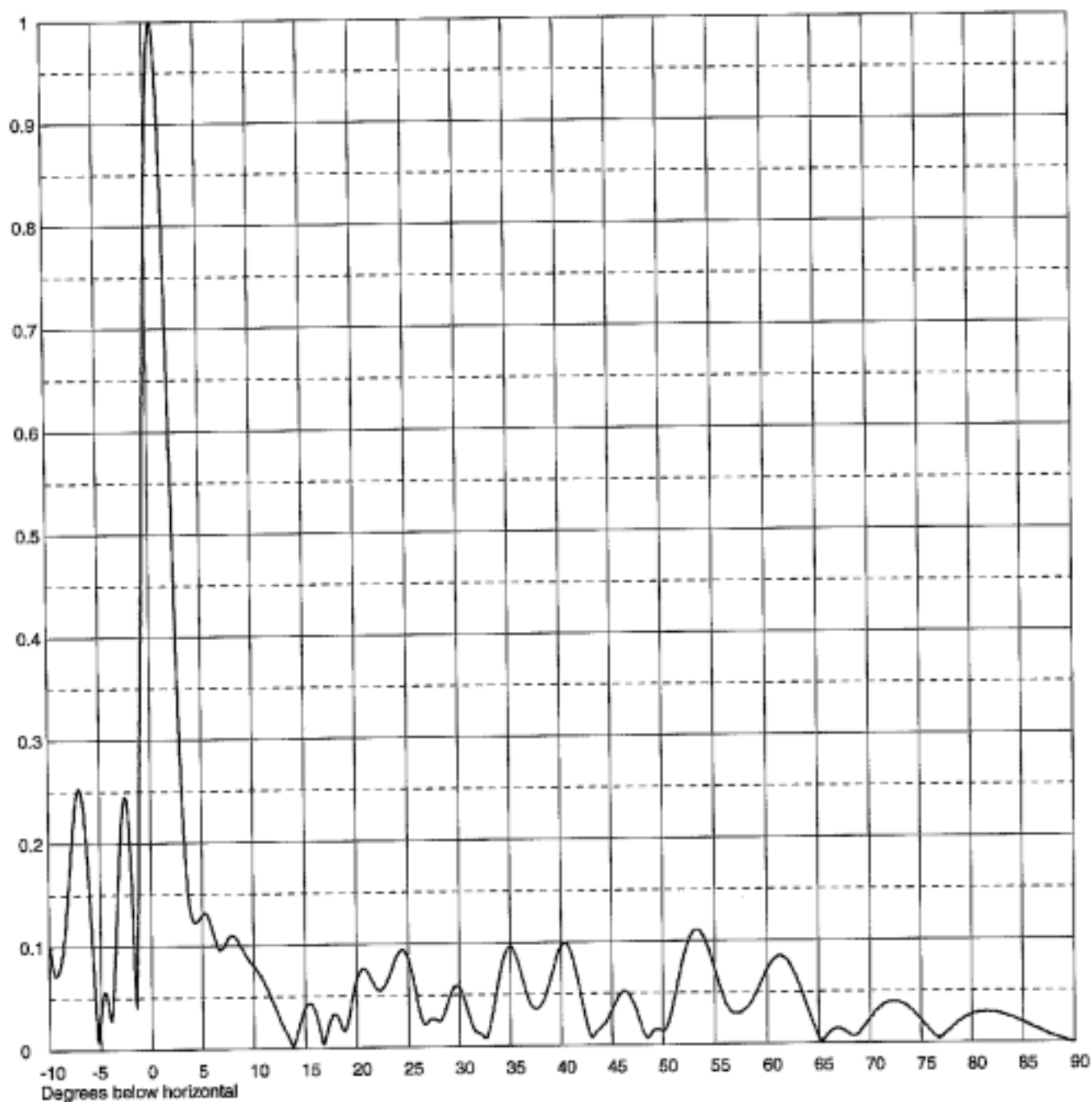


# Dielectric

Date **23 Apr 2002**  
 Call Letters **WPXP-DT** Channel **36**  
 Location **Lake Worth, FL**  
 Customer  
 Antenna Type **TFU-26DSC-R P230**

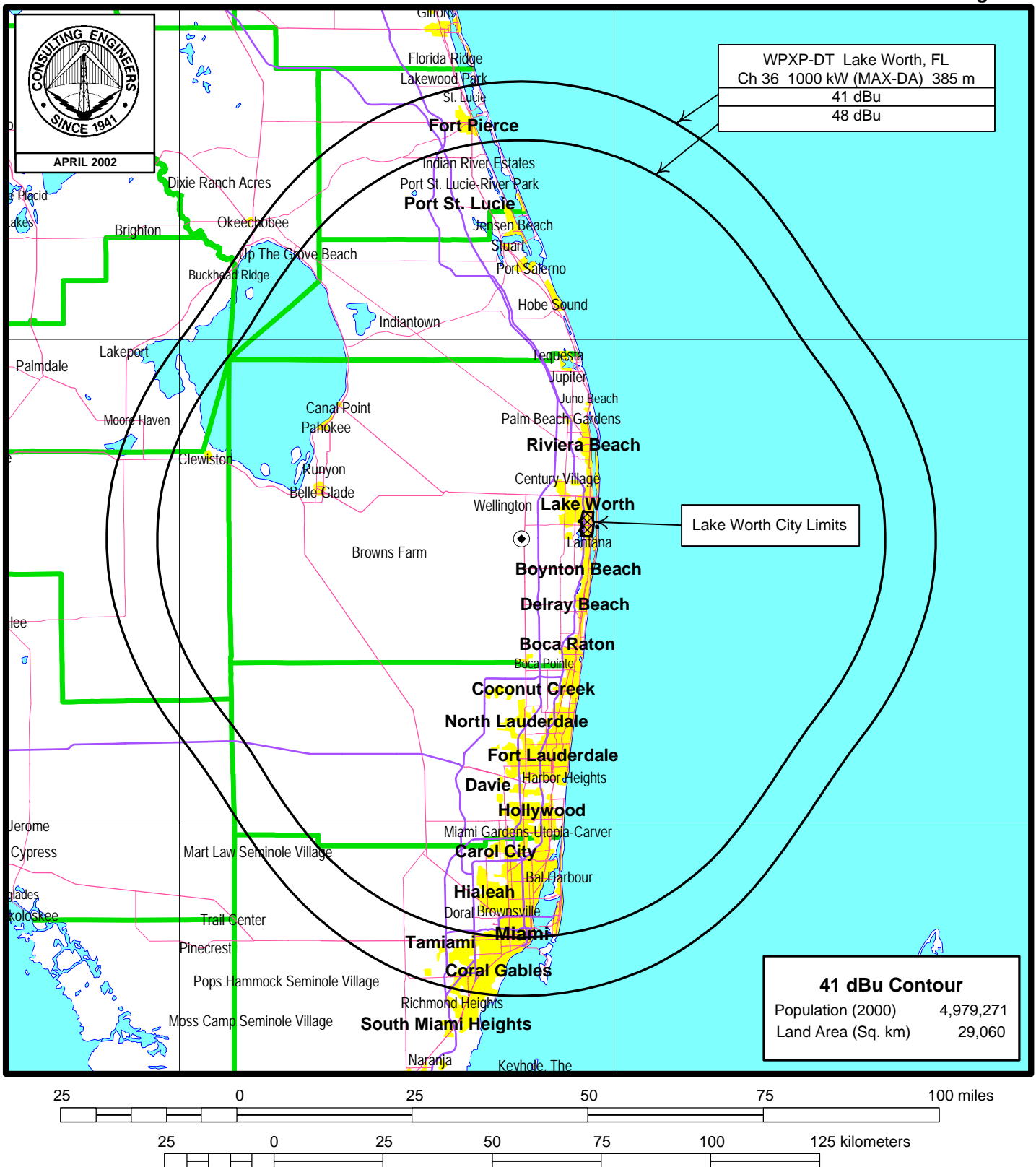
## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>22.5 (13.52 dB)</b>	Beam Tilt	<b>0.75 Degrees</b>
RMS Gain at Horizontal	<b>16.1 (12.07 dB)</b>	Frequency	<b>605.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>26Q225075-90</b>



Remarks:

Figure 3



## **PREDICTED DTV COVERAGE CONTOUR**

**STATION WPXP-DT**

**LAKE WORTH, FLORIDA**

**CH 36 1000 KW (MAX-DA) 385 M**

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

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Technical Specifications

Channel	36
Frequency	602-608 MHz
Proposed Site Coordinates (NAD 27)	26° 35' 20" North Latitude 80° 12' 44" West Longitude
Site Elevation above mean sea level	5.5 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	4.7 m
Overall height of antenna structure (#1220033)	
Above ground	405.7 m
Above mean sea level	411.2 m
Height of antenna radiation center	
Above ground	384.6 m
Above mean sea level	390.1 m
Above average terrain	385 m
Transmitter rated power output (average)	30 kW
Transmission line	Dielectric 6-1/8 inch 50 Ohm rigid coax
Length	(1350 ft) 411.5 m
Efficiency (including combiner)	67.1%
Antenna	Dielectric TFU-26DSC-R-P230
Polarization	Horizontal
Peak Power Gain	51.8
Beam Tilt (electrical)	0.75°
Main Lobe	0 & 180° T

Proposed Operation

Transmitter output power (average)	28.77 kW
Transmission line/combiner loss	9.46 kW
Antenna input power	19.31 kW
Maximum DTV Effective Radiated Power (MAX-DA)	1000 kW