

TECHNICAL EXHIBIT
APPLICATION FOR MINOR MODIFICATION
OF CONSTRUCTION PERMIT
STATION WPXU-DT (FACILITY ID 37971)
JACKSONVILLE, NORTH CAROLINA

AUGUST 31, 2001

CH 34 600 KW (MAX-DA) 199 M

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Technical Narrative

This Technical Exhibit supports a minor modification of construction permit for digital television (DTV) station WPXU-DT on channel 34 at Jacksonville, North Carolina. Station WPXU-DT is authorized (CP) to operate with a directional antenna maximum effective radiated power (ERP) of 600 kW and an antenna height above average terrain (HAAT) of 199 meters (BPCDT-19991028ACI).

Proposed Facilities

This minor modification proposes to change to a different directional antenna system that will be used with the WPXU-TV analog operation. Operation at the current transmitter site (coordinates: 34-31-10 N, 77-26-52 W) with a directional antenna maximum ERP of 600 kW and antenna HAAT of 199 meters is hereby proposed. The FCC antenna structure registration number is 1007163.

The proposed transmitter site is more than 900 kilometers from the closest point of the Canadian border. The site is more than 1,700 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Laurel, Maryland, approximately 520 kilometers to the north. The closest point of the National Radio Quiet Zone (VA/WV) is approximately 344 kilometers to the north-northwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,500 kilometers to the west-

northwest. The closest radio astronomy site operating on TV channel 37 is at Green Bank, West Virginia, approximately 485 kilometers to the north-northwest. These separations are sufficient to not be a concern for coordination purposes.

Nearby Broadcast Facilities

There are no known authorized full service AM stations within 5 kilometers (3.1 miles) of the proposed site. The following is a list of known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed site.

<u>Station</u>	<u>Channel</u>	<u>Bearing</u>	<u>Distance</u>
WQSL, Jacksonville, NC	222C2	0 deg.	0.0 km
WXQR-FM, Jacksonville, NC	288C2	0	0.0
WKOQ, Jacksonville, NC	254C1	234	4.7
WZXS, Topsail Beach, NC	280C3	233	4.7
WPXU-TV, Jacksonville, NC	35	0	0.0

Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems that result from its proposed operation.

Allocation Study

Interference calculations have been made using the procedures outlined in the FCC's OET-69 bulletin, using a 2 kilometer grid spacing. Below is the list of stations considered in the OET-69 analysis.

Stations Potentially Affected by WPXU-DT Proposed Station						
Chan	Call	City/State	Bear (°T)	Dist (km)	Status	App. Ref. No.
19	WUNM-TV	JACKSONVILLE NC	9	65.9	LIC	BLET-19821126KG
19	WUNM-TV	JACKSONVILLE NC	9	65.8	APP	BPCT-20010711ABN
26	WSFX-TV	WILMINGTON NC	238	80.5	LIC	BLCT-20000120AAF
34	WSOC-DT	CHARLOTTE NC	286	310.1	PLN	DTVPLN-DTVP0890
34	WSOC-DT	CHARLOTTE NC	286	310.1	CP	BPCDT-20000427ABI
34	WCIV-TV	CHARLESTON SC	230	273.4	APP	BPRM-20010313ABO
34	WSET-TV	LYNCHBURG VA	328	367.7	APP	BPRM-20010525ADB
35	WPXU-TV	JACKSONVILLE NC	0	0.0	CP MOD	BMPCT-19960515KF
38	WEPX	GREENVILLE NC	2	98.2	LIC	BLCT-19981221KH

From the above list of stations considered, the table below shows the calculated interference caused to each station. Only stations that are predicted to receive interference from the proposed WPXU-DT operation are shown in the interference table.

Study Station				Baseline	Net Population Change/Interference
34	WSOC-DT	CHARLOTTE NC	(PLN)	2,140,111	790 (0.0%)
34	WSOC-DT	CHARLOTTE NC	(CP)	2,140,111	1,288 (0.1%)

The proposed WPXU-DT operation does not cause excessive (greater than 2%, up to 10% total) calculated interference to any analog or DTV assignment and therefore complies with the FCC's 2%/10% interference standard. Therefore, it is believed the proposal is in compliance with the FCC's rules

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 WPXU-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 WPXU-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 195.1 meters above ground level. The maximum ERP is 600 kW. A relative field value of 0.11 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 0.0065 mW/cm^2 . This is 1.6% of the FCC's recommended limit of 0.40 mW/cm^2 for channel 35 for an "uncontrolled" environment.

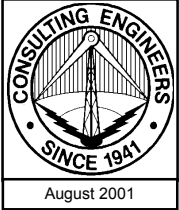
Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site an agreement will control access. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure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

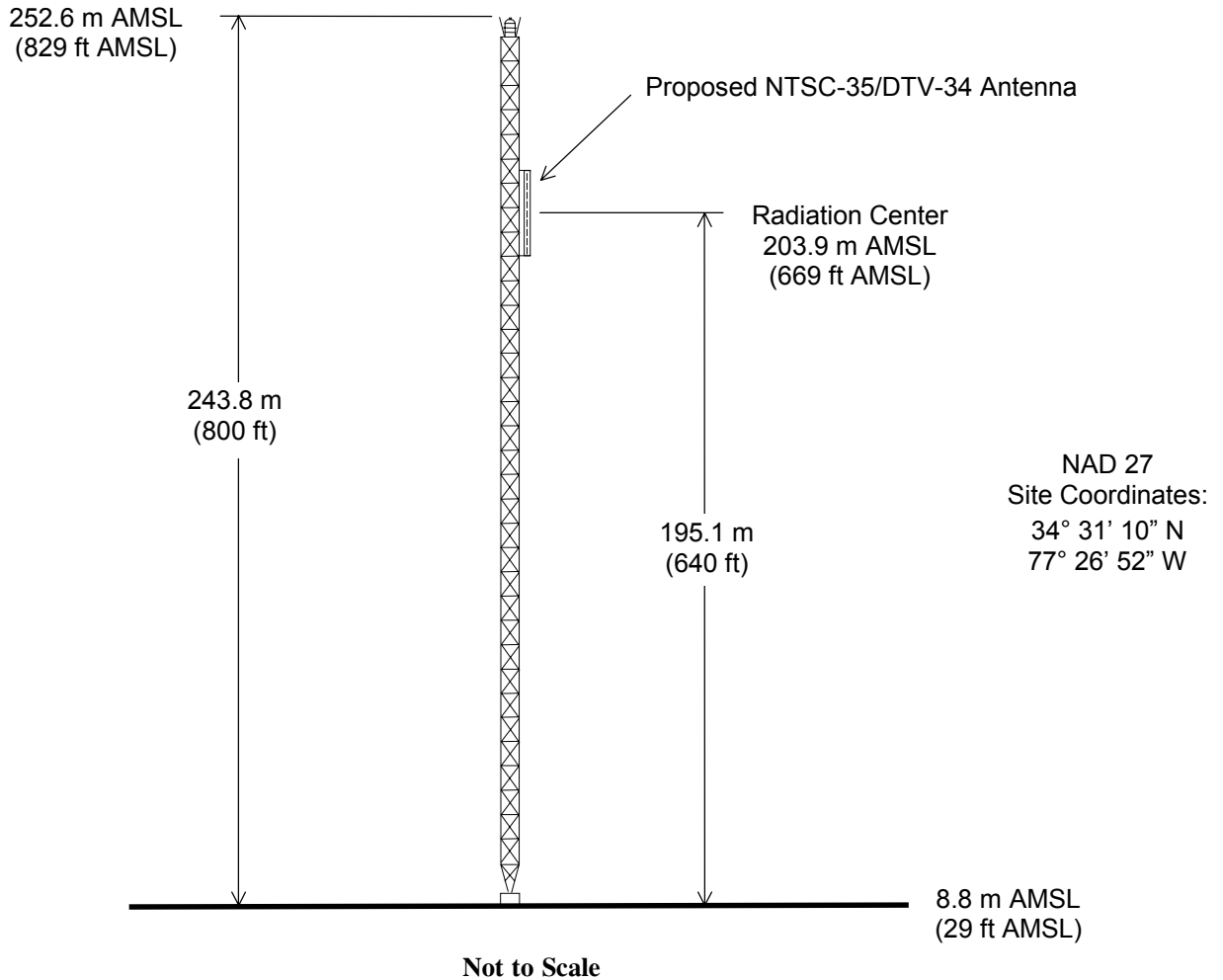
Jonathan N. Edwards

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
(941) 329-6000

August 31, 2001



Registration No. 1007163



ANTENNA AND SUPPORTING STRUCTURE

STATION WPXU-DT

JACKSONVILLE, NORTH CAROLINA

CH 34 600 KW (MAX-DA) 199 M

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

Dielectric

Proposal Number

DCA-8878

Revision:

1

Channel

34

Location

Jacksonville, NC

Customer

Antenna Type

TFU-30DSC-R CT160 DC

AZIMUTH PATTERN

Gain

1.60**(2.04 dB)**

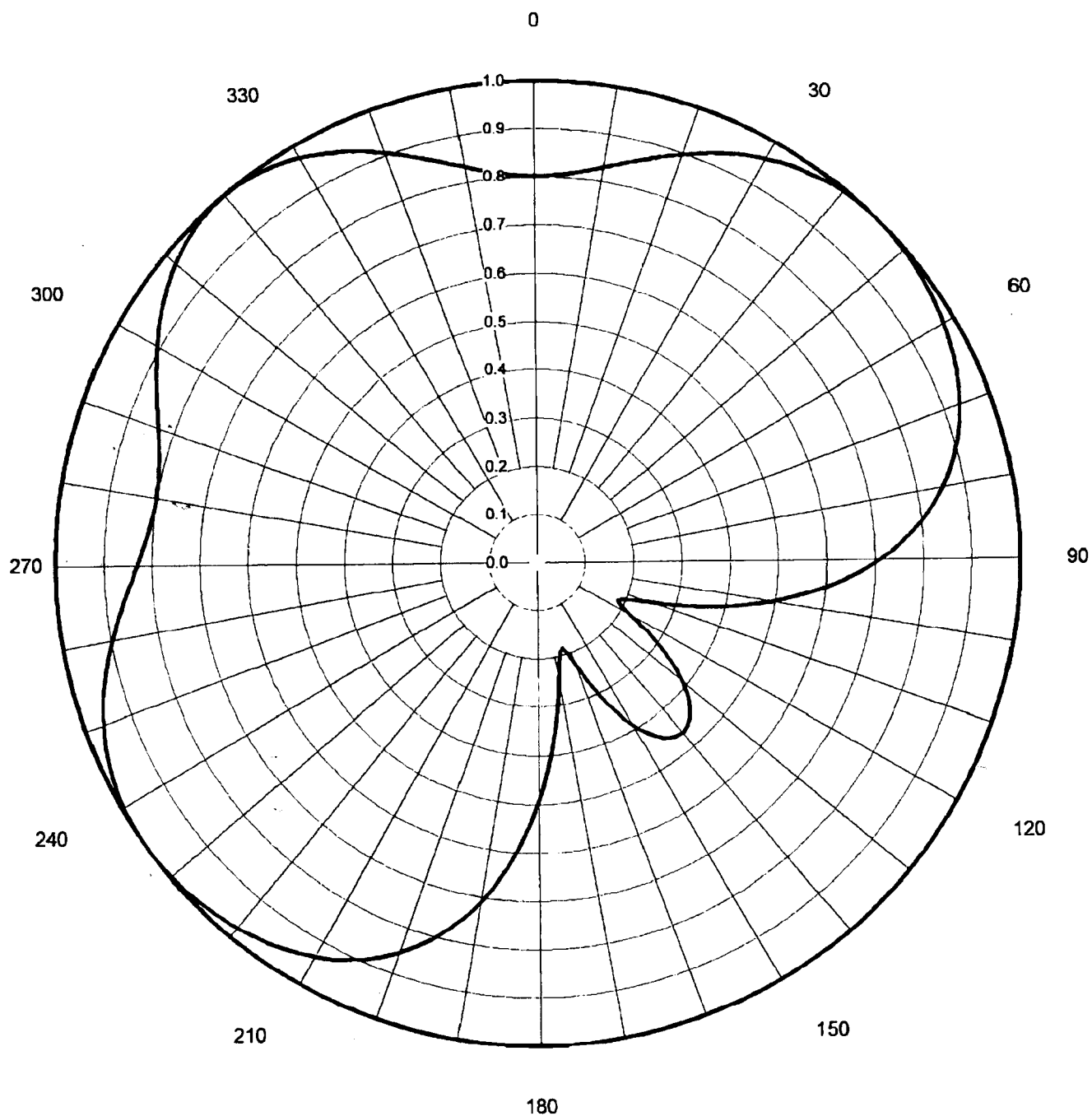
Calculated / Measured

Calculated

Frequency

593.00 MHz

Drawing #

TFU-CT160-34

Dielectric

Proposal Number **DCA-8878**Revision: **1**Channel **34**

Location

Jacksonville, NC

Customer

Antenna Type

TFU-30DSC-R CT160 DC

ELEVATION PATTERN

RMS Gain at Main Lobe

22.00 (13.42 dB)

Beam Tilt

0.70 deg

RMS Gain at Horizontal

13.90 (11.43 dB)

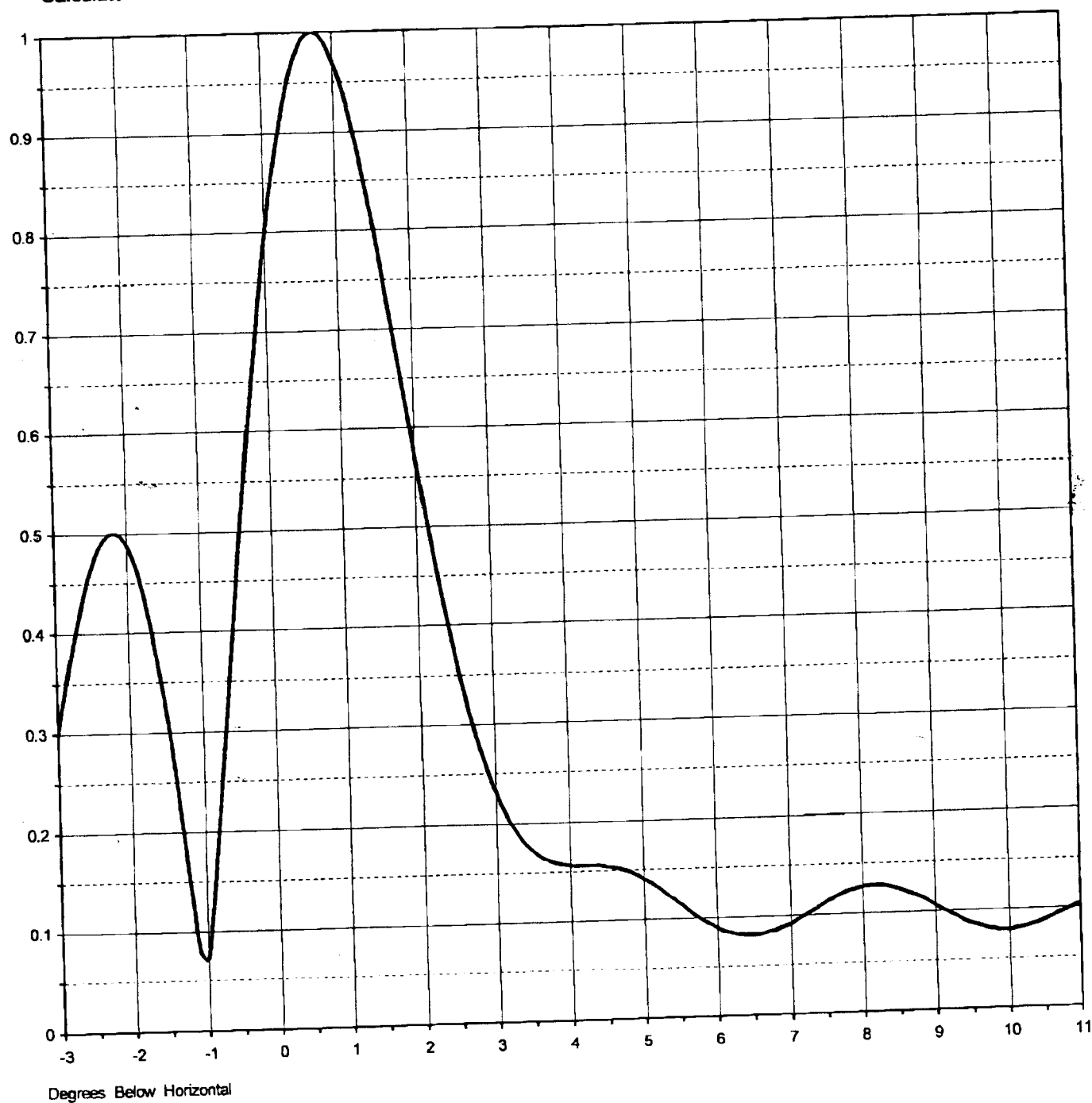
Frequency

593.00 MHz

Calculated / Measured

Calculated

Drawing #

30Q220070

Dielectric

Proposal Number	DCA-8878	Revision:	1
Date	8-Aug-00		
Call Letters	WFXZ-DT	Channel	34
Location	Jacksonville, NC		
Customer			
Antenna Type	TFU-30DSC-R CT160 DC		

ELEVATION PATTERN

RMS Gain at Main Lobe	22.00 (13.42 dB)	Beam Tilt	0.70 deg
RMS Gain at Horizontal	13.90 (11.43 dB)	Frequency	593.00 MHz
Calculated / Measured	Calculated	Drawing #	30Q220070-90

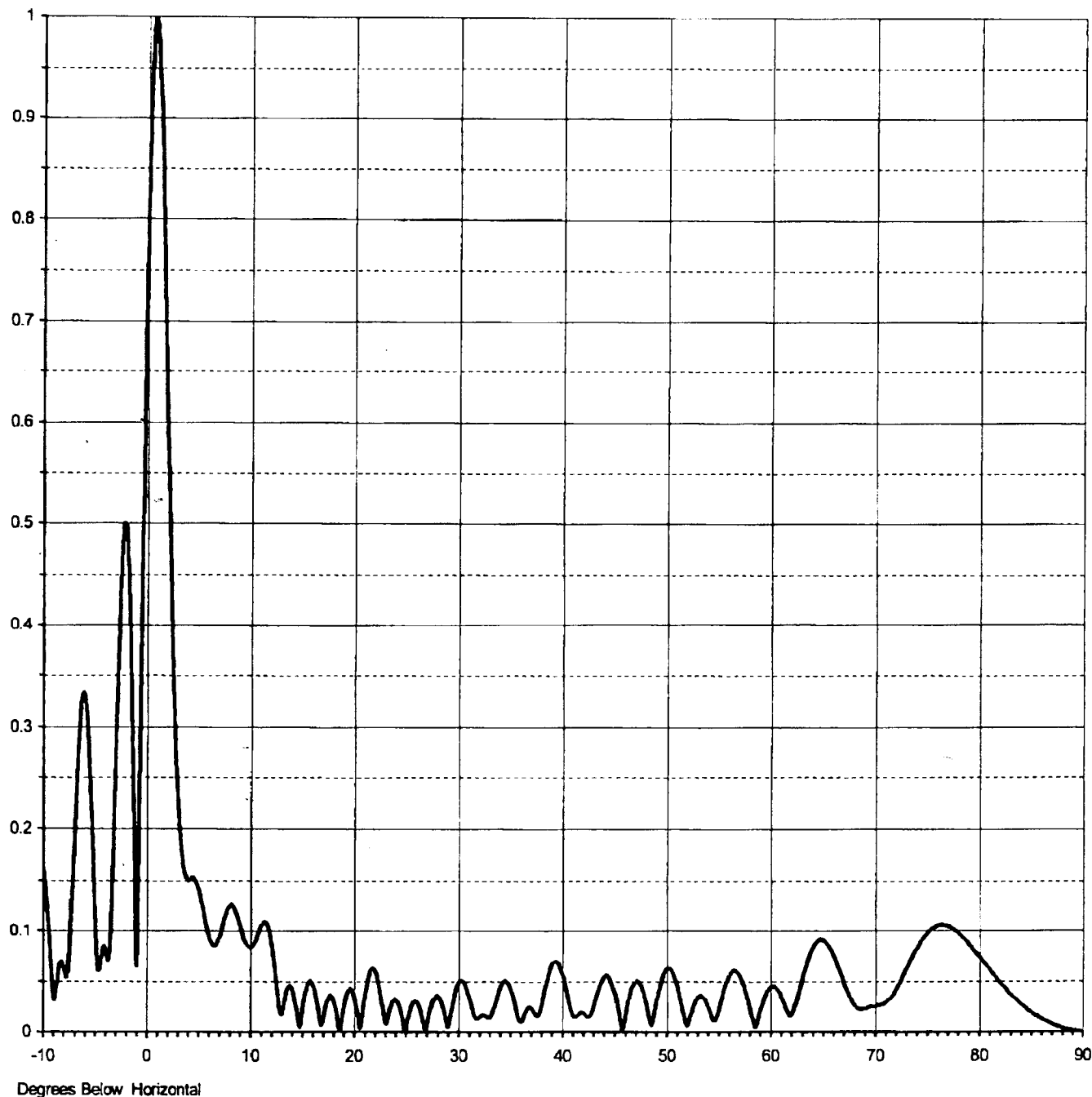
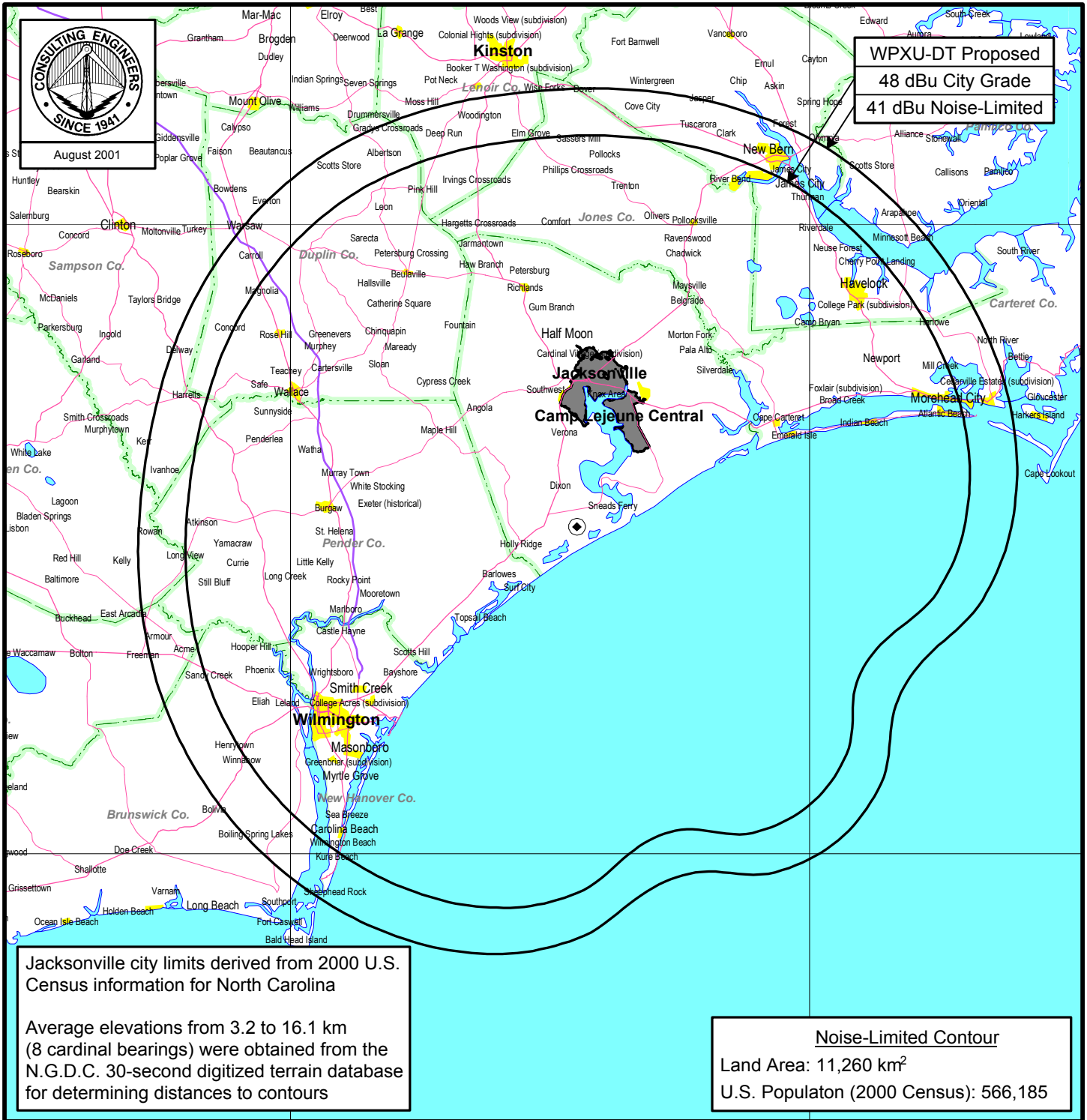


Figure 3



PREDICTED F(50,90) COVERAGE CONTOURS

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

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Technical Specifications

Channel	34
Frequency	590-596 MHz
Proposed Site Coordinates (NAD 27)	34° 31' 10" North Latitude 77° 26' 52" West Longitude
Site Elevation above mean sea level	8.8 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	4.7 m
Overall height of antenna structure	
Above ground	243.8 m
Above mean sea level	252.7 m
Height of antenna radiation center	
Above ground	195.1 m
Above mean sea level	203.9 m
Above average terrain	199 m
Transmitter rated power output (average)	25 kW
Transmission line	Dielectric 6-1/8"/50 Ξ
Length	(700 ft) 213 m
Efficiency (0.89 dB loss)	81.4%
Antenna	Dielectric TFU-30DSC-R CT160 DC
Polarization	Horizontal
Peak Power Gain	35.2
Beam Tilt (electrical)	0.7 \pm
Main Lobes	45°, 235° & 320° T

Proposed Operation

Transmitter output power (average)	23.5 kW
Combiner loss (0.5 dB, 89.1% efficient)	2.6 kW
Transmission line loss	3.9 kW
Antenna input power	17.0 kW
Maximum Effective Radiated Power (MAX-DA)	600 kW