

TECHNICAL EXHIBIT
AMENDMENT TO APPLICATION FOR MINOR CHANGE
MODIFICATION OF DTV CONSTRUCTION PERMIT
STATION WQPX-DT (FACILITY ID 64690)
SCRANTON, PENNSYLVANIA

APRIL 23, 2003

CH 32 528 KW-DA 354 M

TECHNICAL EXHIBIT
AMENDMENT TO APPLICATION FOR MINOR CHANGE
MODIFICATION OF DTV CONSTRUCTION PERMIT
STATION WQPX-DT (FACILITY ID 64690)
SCRANTON, PENNSYLVANIA
CH 32 528 KW-DA 354 M

Table of Contents

	Technical Narrative
Figure 1	Antenna and Supporting Structure
Figure 2	Antenna Patterns
Figure 3	Predicted DTV Coverage Contours
Figure 4	Technical Specifications

TECHNICAL EXHIBIT
AMENDMENT TO APPLICATION FOR MINOR CHANGE
MODIFICATION OF DTV CONSTRUCTION PERMIT
STATION WQPX-DT (FACILITY ID 64690)
SCRANTON, PENNSYLVANIA
CH 32 528 KW-DA 354 M

Technical Narrative

This Technical Exhibit supports a minor change amendment to the application to modify the digital television (DTV) construction permit (CP) for station WQPX-DT at Scranton, Pennsylvania (Facility ID 64690). Station WQPX-DT currently has a construction permit (CP) to operate on channel 32 with a non-directional (ND) antenna system (BPCDT-19990521KF). Station WQPX-DT is authorized to use a Dielectric TFU-16DSC-R-O3 non-directional (ND) antenna system. The DTV effective radiated power (ERP) is 40 kilowatts (kW). The antenna center of radiation is located 151 meters above ground level (AGL) and 823 meters above mean sea level (AMSL). The antenna height above average terrain (HAAT) is 477 meters. The transmitter site coordinates are 41-25-36, 75-44-52 (NAD-27). The FCC antenna structure registration number is 1027163.

Station WQPX-DT also has an application pending to modify the construction permit (BMPCDT-20010510AAE). It proposes to change to a Dielectric TFU-16DSC-R-C170 directional antenna (DA) system. The antenna pattern is “cardioid” shaped with the major lobe oriented to the north (0 degrees True). The proposed maximum DTV ERP is 40 kW. The proposed antenna center of radiation is 164.3 meters AGL, and 836.4 meters AMSL. The proposed antenna HAAT is 491 meters. The site coordinates and antenna structure remain the same as for the CP operation.

Proposed DTV Facilities

This minor change application proposes to amend the pending application to modify CP (BMPCDT-20010510AAE). It is proposed to relocate the WQPX-DT facilities to the site of WQPX's analog (NTSC) operation on channel 64. The proposed site coordinates are 41-26-06, 75-43-35 (NAD-27). The FCC antenna structure registration number is 1026736. It is proposed to mount the Dielectric TFU-16DSC-R-C170 directional antenna system on the existing structure with the center of radiation at 75.6 meters AGL, and 712.6 meters AMSL (see Figure 1). The proposed antenna HAAT will be 354 meters. The antenna pattern will remain oriented due north (0 degrees True). The proposed maximum DTV ERP is 528 kW.

The proposed WQPX-DT transmitter site is approximately 259 kilometers from the closest point of the Canadian border. The proposed WQPX-DT operation is considered a Class VU assignment for purposes of the US/Canada Letter of Understanding (LOU) concerning DTV. The proposed WQPX-DT operation meets the separation requirements to pertinent Canadian analog (NTSC) and DTV allotments.

The proposed WQPX-DT site is more than 2400 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Canandaigua, New York, approximately 207 kilometers to the northwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 300 kilometers to the southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2400 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Hancock, New Hampshire, approximately 350 kilometers to the northeast. These separations are considered sufficient to not be a coordination concern.

The proposed WQPX-DT transmitter site is also used for the WQPX(TV) analog operation on channel 64. Station WWDL-FM on channel 285A (104.9 MHz) at Scranton is also at the site. There are no known AM stations within 5 kilometers (3 miles) of the proposed WQPX-DT site. No adverse electromagnetic interaction is expected. The applicant recognizes that it is responsible to remedy prohibited electromagnetic problems that its proposed operation may create.

Figure 3 is a map showing the predicted 48 dBu F(50,90) principal city contour and 41 dBu F(50,90) service contour for the proposed WQPX-DT operation. The city limits of Scranton, as defined in the 2000 US Census for Pennsylvania, are identified. The predicted 48 dBu contour encompasses the Scranton limits as required by the FCC rules. The estimated population (2000 Census) within the predicted 41 dBu contour is 1,456,819 people.

Allocation Study

Interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 kilometer grid. The proposed WQPX-DT operation complies with the FCC's 2%/10% interference standards with respect to pertinent surrounding analog (NTSC) full service TV assignments and DTV assignments and allotments.

Pertinent low power television (LPTV) stations that qualify for Class A consideration and are operating within the FCC's core band (ie, 2-51) have been examined. No adverse interference problems to Class A TV assignments are predicted.

Radiofrequency Electromagnetic Field Exposure

The proposed WQPX-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 75.6 meters above ground level. The proposed maximum DTV ERP is 528 kW. A relative field value of 0.15 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 0.0733 mW/cm^2 . This is less than 19% of the FCC's recommended limit of 0.39 mW/cm^2 for channel 32 for an "uncontrolled" environment. The calculated power density is less than 4% 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 WQPX-DT operation appears to be otherwise categorically excluded from environmental processing.

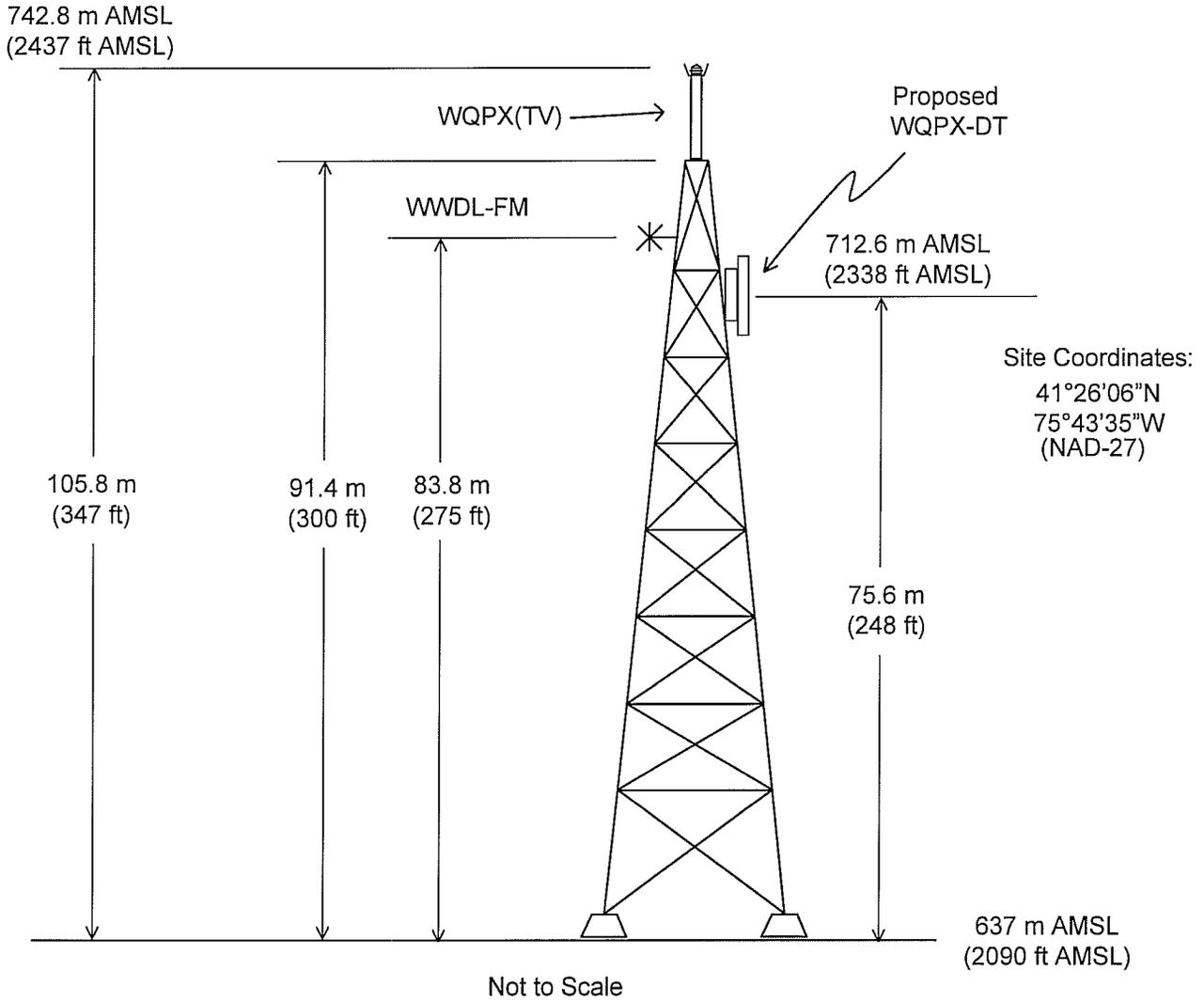
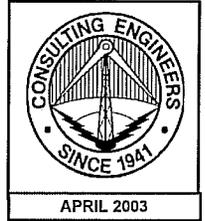
If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

John A. Lundin

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
(941) 329-6000 voice
(941) 329-6030 fax
john@DLR.com e-mail

April 23, 2003

FCC Tower ID: 1026736



ANTENNA AND SUPPORTING STRUCTURE

STATION WQPX-DT
SCRANTON, PENNSYLVANIA
CH 32 528 KW-DA 354 M

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

Exhibit No.



Date **11 Apr 2003**
Call Letters **WQPX-DT** Channel **32**
Location **Scranton, PA**
Customer **Paxson**
Antenna Type **TFU-16DSC-R C170**

AZIMUTH PATTERN

Gain
Calculated / Measured

1.70 (2.30 dB)
Calculated

Frequency **581 MHz**
Drawing # **TFU-C170**

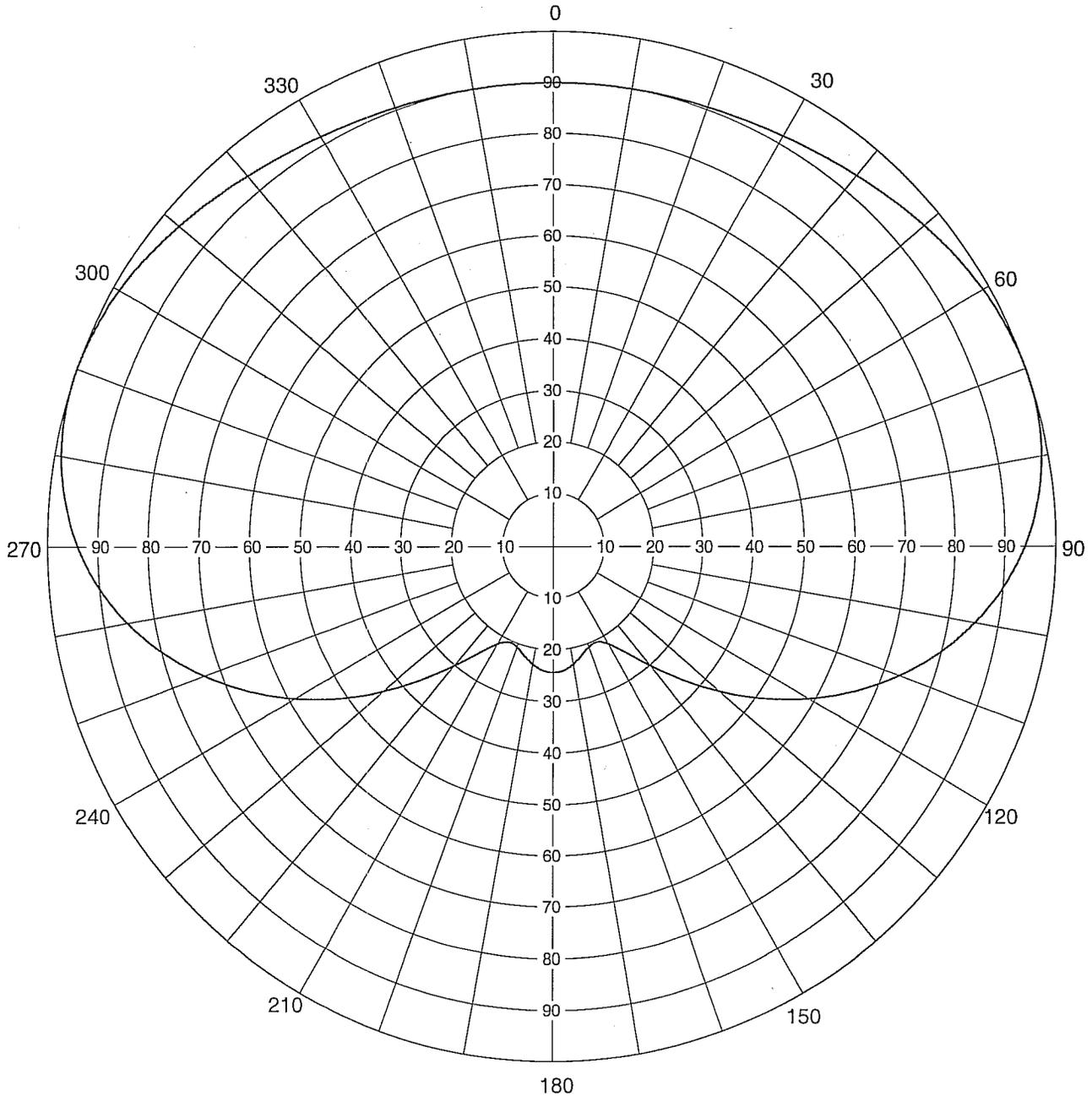


Exhibit No.



Date **22 Apr 2003**
 Call Letters **WQPX-DT** Channel **32**
 Location **Scranton, PA**
 Customer **Paxson**
 Antenna Type **TFU-16DSC-R C170**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-C170**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.899	426.7	26.30
10	0.900	427.7	26.31
20	0.905	432.4	26.36
30	0.917	444.0	26.47
40	0.936	462.6	26.65
50	0.963	489.7	26.90
60	0.988	515.4	27.12
70	1.000	528.0	27.23
80	0.987	514.4	27.11
90	0.940	466.5	26.69
100	0.854	385.1	25.86
110	0.733	283.7	24.53
120	0.588	182.6	22.61
130	0.437	100.8	20.04
140	0.302	48.2	16.83
150	0.218	25.1	14.00
160	0.207	22.6	13.55
170	0.232	28.4	14.54
180	0.245	31.7	15.01
190	0.232	28.4	14.54
200	0.207	22.6	13.55
210	0.218	25.1	14.00
220	0.302	48.2	16.83
230	0.437	100.8	20.04
240	0.588	182.6	22.61
250	0.733	283.7	24.53
260	0.854	385.1	25.86
270	0.940	466.5	26.69
280	0.987	514.4	27.11
290	1.000	528.0	27.23
300	0.988	515.4	27.12
310	0.963	489.7	26.90
320	0.936	462.6	26.65
330	0.917	444.0	26.47
340	0.905	432.4	26.36
350	0.900	427.7	26.31

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
71	1.000	528.0	27.23
180	0.245	31.7	15.01
289	1.000	528.0	27.23

Minima

Angle	Field	ERP (kW)	ERP (dBk)
156	0.204	22.0	13.42
204	0.204	22.0	13.42

Exhibit No.



Date: 15 Apr 2003
 Call Letters: WQPX-DT Channel: 32
 Location: Scranton, PA
 Customer: Paxson
 Antenna Type: TFU-16DSC-R C170

ELEVATION PATTERN

RMS Gain at Main Lobe	13.0 (11.14 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	11.5 (10.61 dB)	Frequency	581.00 MHz
Calculated / Measured	Calculated	Drawing #	16Q130075

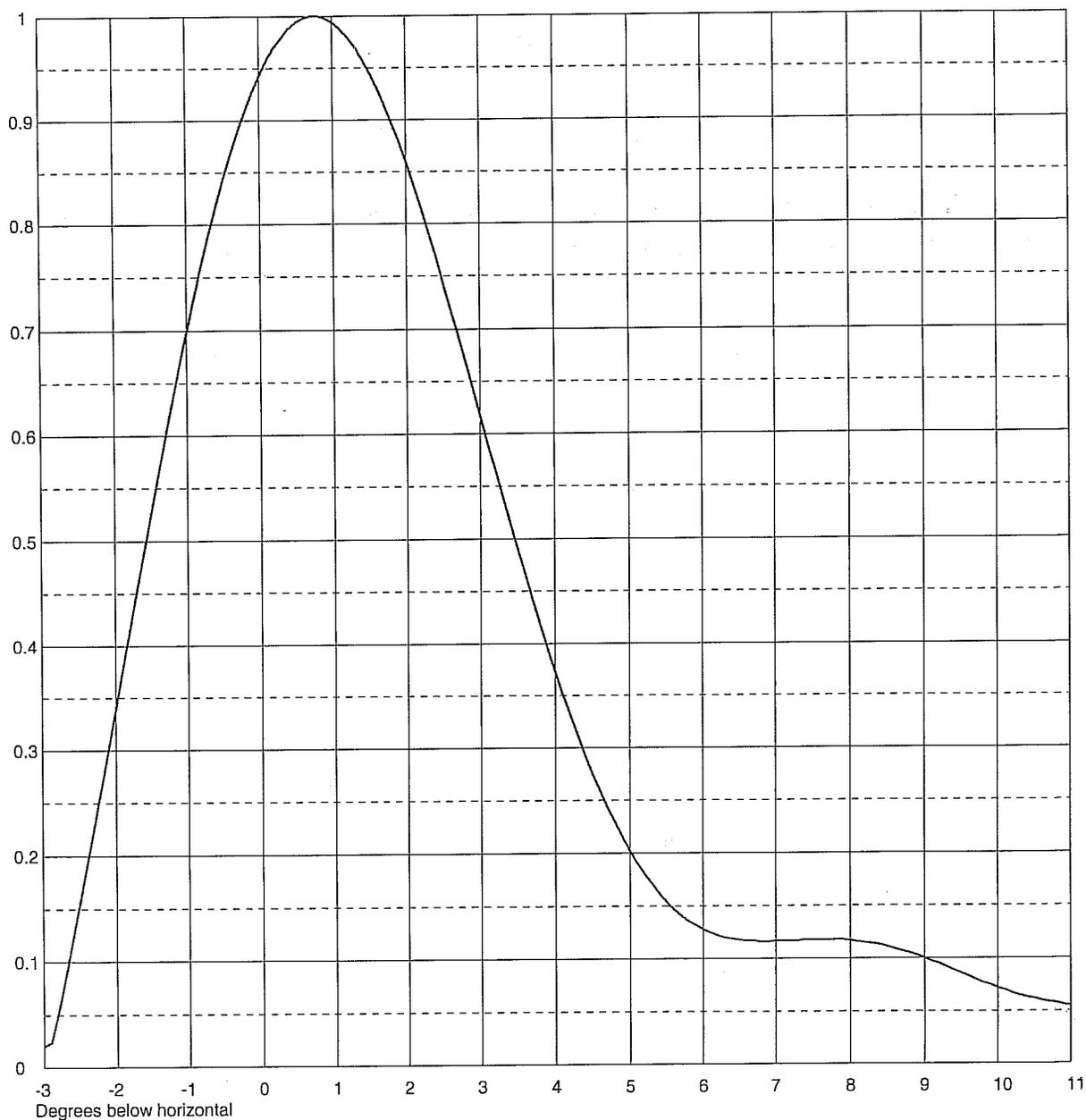


Exhibit No.



Date **15 Apr 2003**
Call Letters **WQPX-DT** Channel **32**
Location **Scranton, PA**
Customer **Paxson**
Antenna Type **TFU-16DSC-R C170**

ELEVATION PATTERN

RMS Gain at Main Lobe	13.0 (11.14 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	11.5 (10.61 dB)	Frequency	581.00 MHz
Calculated / Measured	Calculated	Drawing #	16Q130075-90.

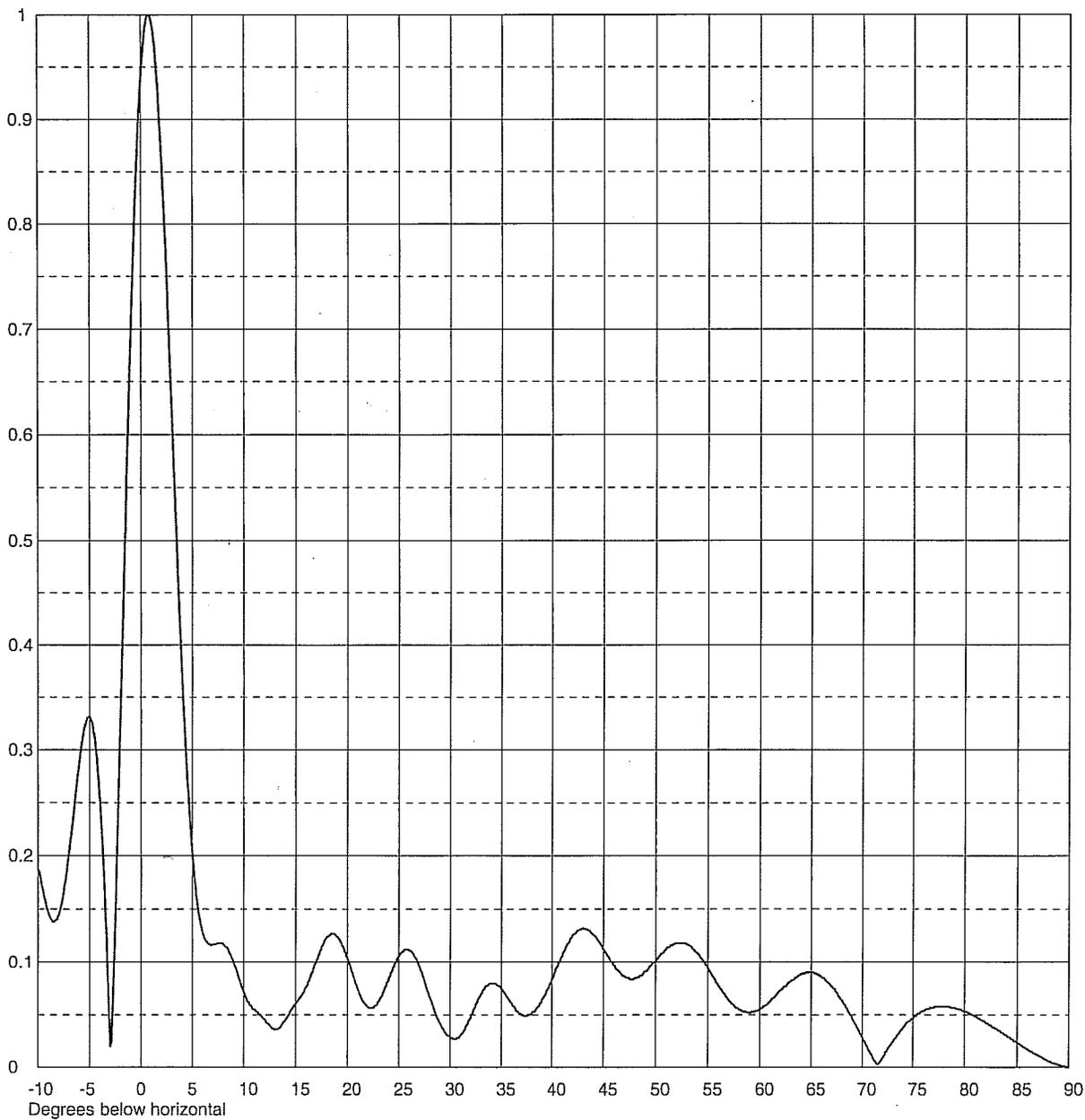
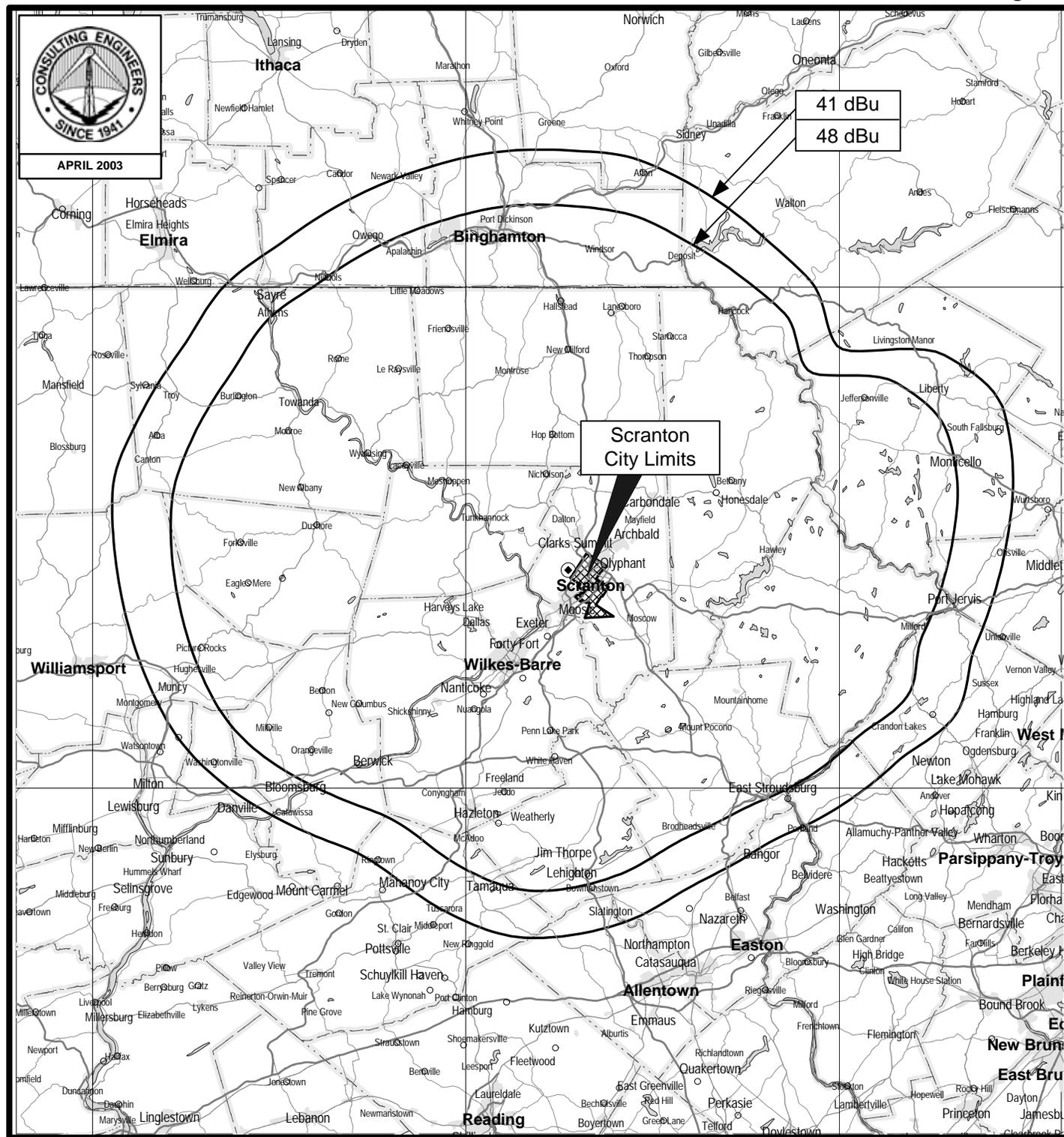


Figure 3



PREDICTED COVERAGE CONTOURS

STATION WQPX-DT
SCRANTON, PENNSYLVANIA
CH 32 528 KW-DA 354 M

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

TECHNICAL EXHIBIT
 AMENDMENT TO APPLICATION FOR MINOR CHANGE
 MODIFICATION OF DTV CONSTRUCTION PERMIT
 STATION WQPX-DT (FACILITY ID 64690)
 SCRANTON, PENNSYLVANIA
 CH 32 528 KW-DA 354 M

Technical Specifications For Proposed DTV Operation

Channel	32
Frequency	578-584 MHz
Proposed Site Coordinates (NAD 27)	41° 26' 06" North Latitude 75° 43' 35" West Longitude
Site Elevation above mean sea level	637.0 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	359.0 m
Overall height of antenna structure (#1026736)	
Above ground	105.8 m
Above mean sea level	742.8 m
Height of antenna radiation center	
Above ground	75.6 m
Above mean sea level	712.6 m
Above average terrain	354 m
Transmitter rated power output (average)	26 kW
Transmission line	Dielectric 6-1/8", 75 Ohm, rigid coax
Length	(300 ft) 91.4 m
Efficiency	92.2%
Antenna	Dielectric TFU-16DSC-R-C170
Polarization	Horizontal
Peak Power Gain	22.1
Beam Tilt (electrical)	0.75°

Proposed Operation

Transmitter output power (average)	25.9 kW
Transmission line	2.0 kW
Antenna input power	23.9 kW
Maximum DTV Effective Radiated Power	528 kW