

TECHNICAL EXHIBIT  
MINOR AMENDMENT TO THE APPLICATION  
FOR CONSTRUCTION PERMIT  
STATION WBPX-DT (FACILITY ID 7692)  
BOSTON, MASSACHUSETTS

JULY 31, 2001

CH 32 560 KW (MAX-DA) 263 M

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Technical Narrative

This Technical Exhibit supports a minor amendment to the application for construction permit for digital television (DTV) station WBPX-DT on channel 32 at Boston, Massachusetts. Station WBPX-DT has an application pending to operate with a directional antenna maximum effective radiated power (ERP) of 650 kW and an antenna height above average terrain (HAAT) of 217 meters (BPCDT-19991101AFA).

Proposed Facilities

This amendment proposes changes to the currently pending application that include (1) decrease directional ERP and (2) increase antenna HAAT. Operation at the currently proposed transmitter site (coordinates: 42-18-27 N, 71-13-27 W) with a directional antenna maximum ERP of 560 kW and antenna HAAT of 263 meters is hereby proposed (*FCC tower registration no. 1004623*).

The proposed transmitter site is approximately 302 kilometers from the closest point of the Canadian border. The proposal meets the required minimum separation distances to all Canadian allotments. It is therefore believed that the proposed WBPX-DT operation is in compliance with the U.S./Canada LOU. If coordination with Canada is still necessary, it is respectfully requested.

The site is more than 2,700 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Belfast, Maine, approximately 294 kilometers to the northeast. The closest point of the National Radio Quiet Zone (VA/WV) is approximately 486 kilometers to the southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 2,800 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Hancock, New Hampshire, approximately 94 kilometers to the northwest. 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 proposed WBPX-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. Below is the list of stations considered in the OET-69 analysis.

Stations Potentially Affected by WBPX-DT						
Chan	Call	City/State	Bear (°T)	Dist (km)	Status	App. Ref. No.
25	WFXT	BOSTON MA	137	0.6	LIC	BMLCT-19911001LV
28	WLWC	NEW BEDFORD MA	157	63.8	LIC	BLCT-19970424KE
31	WTIC-TV	HARTFORD CT	244	148.8	APP	BPRM-20001020ACY
31	WFXT-DT	BOSTON MA	137	0.6	PLN	DTVPLN-DTVP0777
31	WNNE	HARTFORD VT	322	161.2	LIC	BLCT-19791119LG
32	WEDH-DT	HARTFORD CT	244	149.0	APP	BPEDT-19990113KG
32	WEDH-DT	HARTFORD CT	246	143.4	PLN	DTVPLN-DTVP0807
32	WPSG-DT	PHILADELPHIA PA	234	419.8	CP	BPCDT-19991025AEE
32	WPSG-DT	PHILADELPHIA PA	234	419.8	PLN	DTVPLN-DTVP0827
32	WQPX	SCRANTON PA	257	387.0	APP	BMPCDT-20010510AAE
32	WQPX-DT	SCRANTON PA	257	384.9	PLN	DTVPLN-DTVP0828
32	WETK-DT	BURLINGTON VT	333	277.9	APP	BPEDT-20000427ACS
32	WETK-DT	BURLINGTON VT	333	278.0	PLN	DTVPLN-DTVP0836
33	WFSB-DT	HARTFORD CT	246	143.3	PLN	DTVPLN-DTVP0843
33	WPXG-DT	CONCORD NH	355	97.8	CP	BPCDT-19991101AFX
33	WNBU-DT	CONCORD NH	355	97.8	PLN	DTVPLN-DTVP0857
36	WSBE-TV	PROVIDENCE RI	200	59.5	LIC	BLET-19860926KP
40	WGGB-TV	SPRINGFIELD MA	267	117.4	LIC	BLCT-19990429KH

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 WBPX-DT operation are shown in the interference table.

Study Station	Baseline	Net Population Change/Interference
28 WLWC NEW BEDFORD MA	4,119,369	4,635 (0.1%)
31 WFXT-DT BOSTON MA	6,074,114	1,295 (0.0%)
32 WEDH-DT HARTFORD CT (APP)	2,846,755	55,979 (2.0%)
32 WEDH-DT HARTFORD CT (PLN)	2,846,755	36,150 (1.3%)
32 WETK-DT BURLINGTON VT (APP)	455,474	316 (0.1%)
32 WETK-DT BURLINGTON VT (PLN)	455,474	114 (0.0%)
33 WFSB-DT HARTFORD CT	3,886,896	829 (0.0%)
33 WPXG-DT CONCORD NH	1,909,847	26,562 (1.4%)
33 WNBU-DT CONCORD NH	1,909,847	16,538 (0.9%)

WEDH-DT (PLN) Interference Received/Response to FCC Letter of July 13, 2001

It is noted that the DTV allotment for station WEDH currently receives interference in excess of 10% of its service population. The FCC rules prohibit stations from causing any new interference to a station that already receives 10% (or greater) interference. However, in this case the excessive interference caused to the WEDH DTV allotment appears to be from the proposed DTV rulemaking (PRM) for WTIC-TV at Hartford, CT (BPRM-20001020ACY). Specifically, our studies indicate that the WTIC-TV PRM causes 13.6 % interference to the WEDH DTV allotment service population. It is therefore believed that the WTIC-TV PRM is not in compliance with the FCC's OET-69 interference rules. For this reason, the WTIC-TV PRM has not been considered in the OET-69 analysis and it is believed that the WBPX-DT should be allowed to cause 2% (up to 10% total) new interference to the WEDH DTV allotment. It is not believed that a waiver is necessary, however if the FCC differs, a waiver is respectfully requested with respect to interference caused to the DTV allotment for station WEDH.

The proposed WBPX-DT operation does not cause calculated interference to any other analog or DTV assignment. Therefore, it is believed the proposal complies with the FCC's 2%/10% interference standard. If a waiver of the FCC rules is required with regards to ignoring the WTIC-TV PRM, it is respectfully requested.

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 WBPX-DT operation does not cause any new calculated interference to any current or potential Class A station over that already predicted to be caused by the current WBPX-DT

allotment. If necessary, a waiver of the FCC rules is requested based on use of the FCC's OET-69 procedures to demonstrate no new interference to LPTV/Class A assignments.

Radiofrequency Electromagnetic Field Exposure

The proposed WBPX-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 274.3 meters above ground level. The maximum DTV ERP is 560 kW. A conservative relative field value of 0.15 was used for the calculation (see Figure 2C). Therefore, the "worst-case" calculated power density at a point 2 meters above ground level is 0.0057 mW/cm<sup>2</sup>. This is 1.5% of the FCC's recommended limit of 0.39 mW/cm<sup>2</sup> for channel 32 for an "uncontrolled" environment.

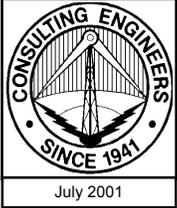
Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. 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. The proposed WBPX-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  
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July 31, 2001



411.2 m AMSL  
(1349 ft AMSL)

381.0 m  
(1250 ft)

Proposed DTV-32 Antenna

Radiation Center  
304.5 m AMSL  
(999 ft AMSL)

274.3 m  
(900 ft)

NAD 27  
Site Coordinates:  
42° 18' 27" N  
71° 13' 27" W

30.2 m AMSL  
(99 ft AMSL)

Not to Scale

# ANTENNA AND SUPPORTING STRUCTURE

STATION WBPX-DT

BOSTON, MASSACHUSETTS

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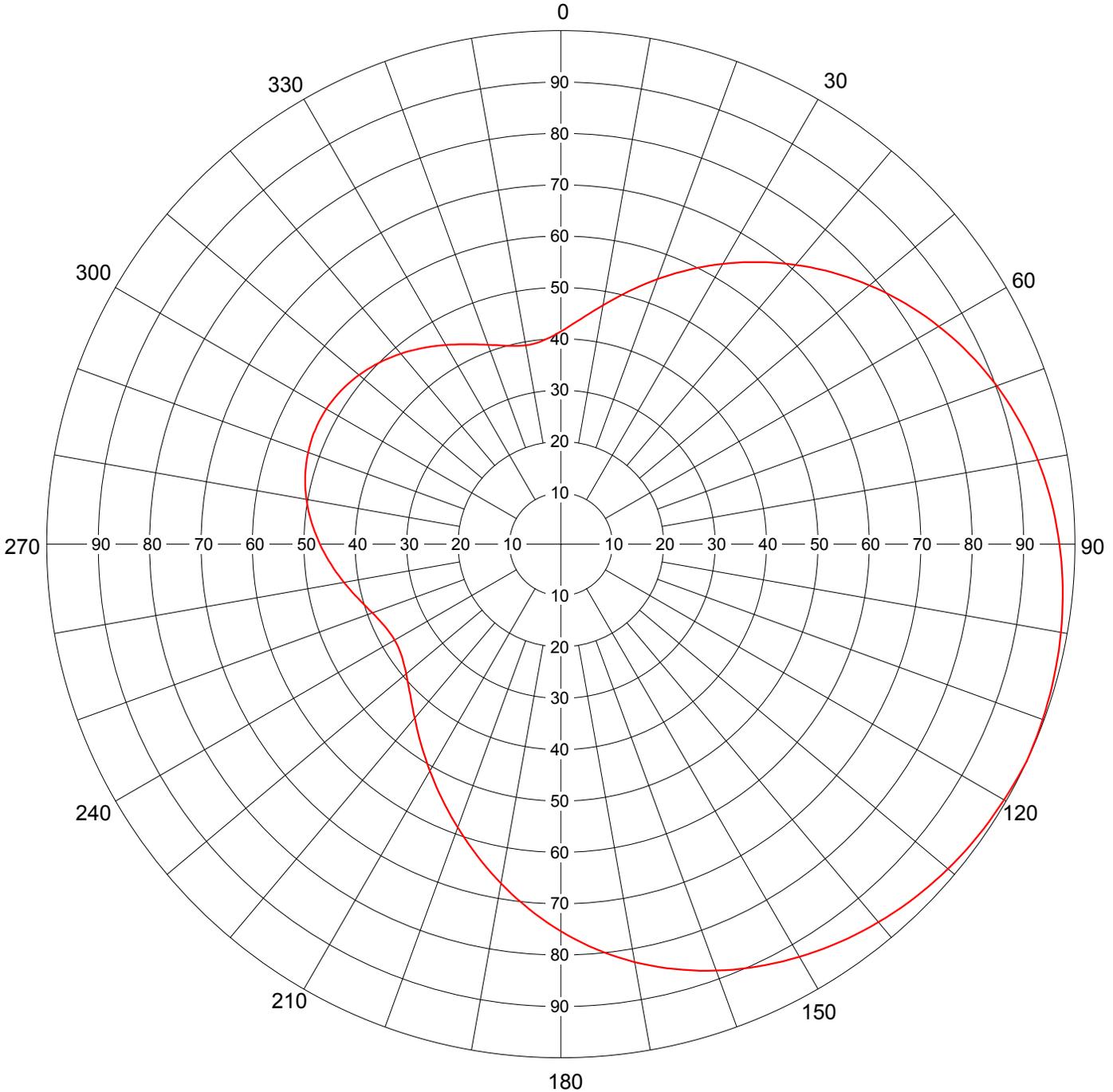
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



Date **31 Jul 2001**  
Call Letters **WBPX-DT** Channel **32**  
Location **Boston, MA**  
Customer  
Antenna Type **TFU-24DSB-C (C)**

**AZIMUTH PATTERN**

RMS Gain at Main Lobe **2.10 (3.22 dB)** Frequency **581 MHz**  
Calculated / Measured **Calculated** Drawing # **DSB-C**



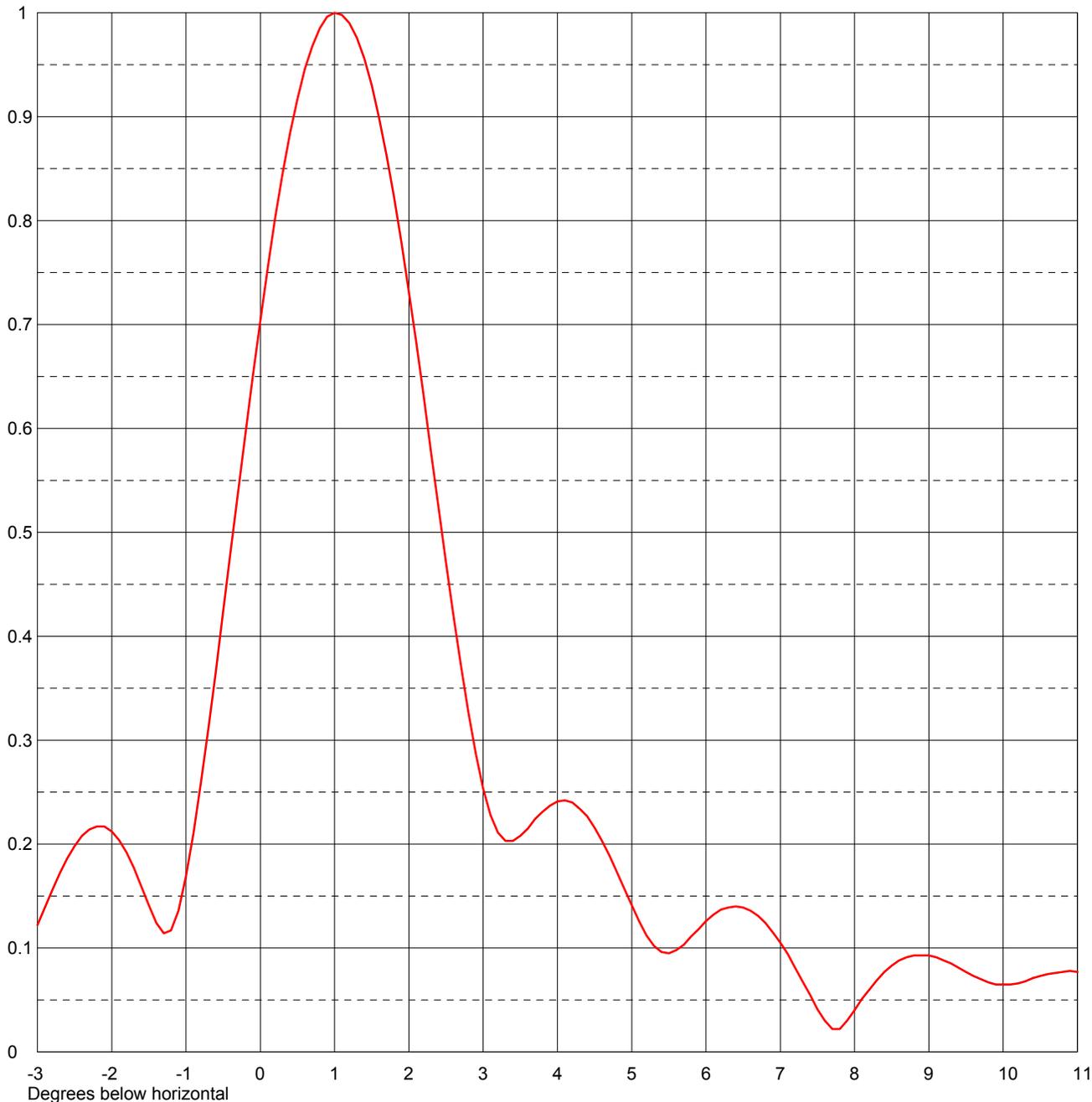
Remarks:



Date **31 Jul 2001**  
Call Letters **WBPX-DT** Channel **32**  
Location **Boston, MA**  
Customer  
Antenna Type **TFU-24DSB-C (C)**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>24.0 (13.80 dB)</b>	Beam Tilt	<b>1.00 Degrees</b>
RMS Gain at Horizontal	<b>11.9 (10.76 dB)</b>	Frequency	<b>581.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24B240100</b>



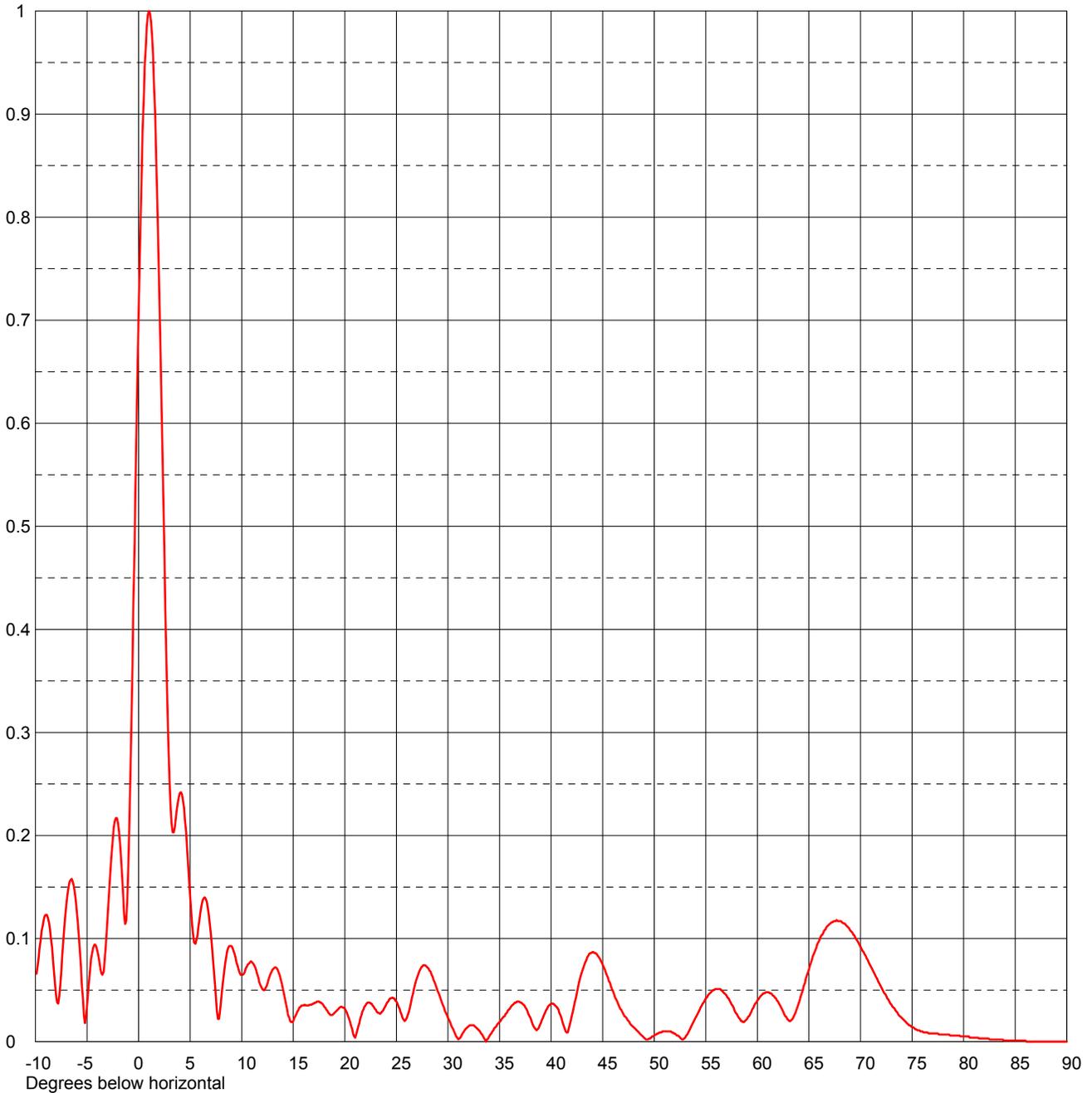
Remarks:



Date **31 Jul 2001**  
Call Letters **WBPX-DT** Channel **32**  
Location **Boston, MA**  
Customer  
Antenna Type **TFU-24DSB-C (C)**

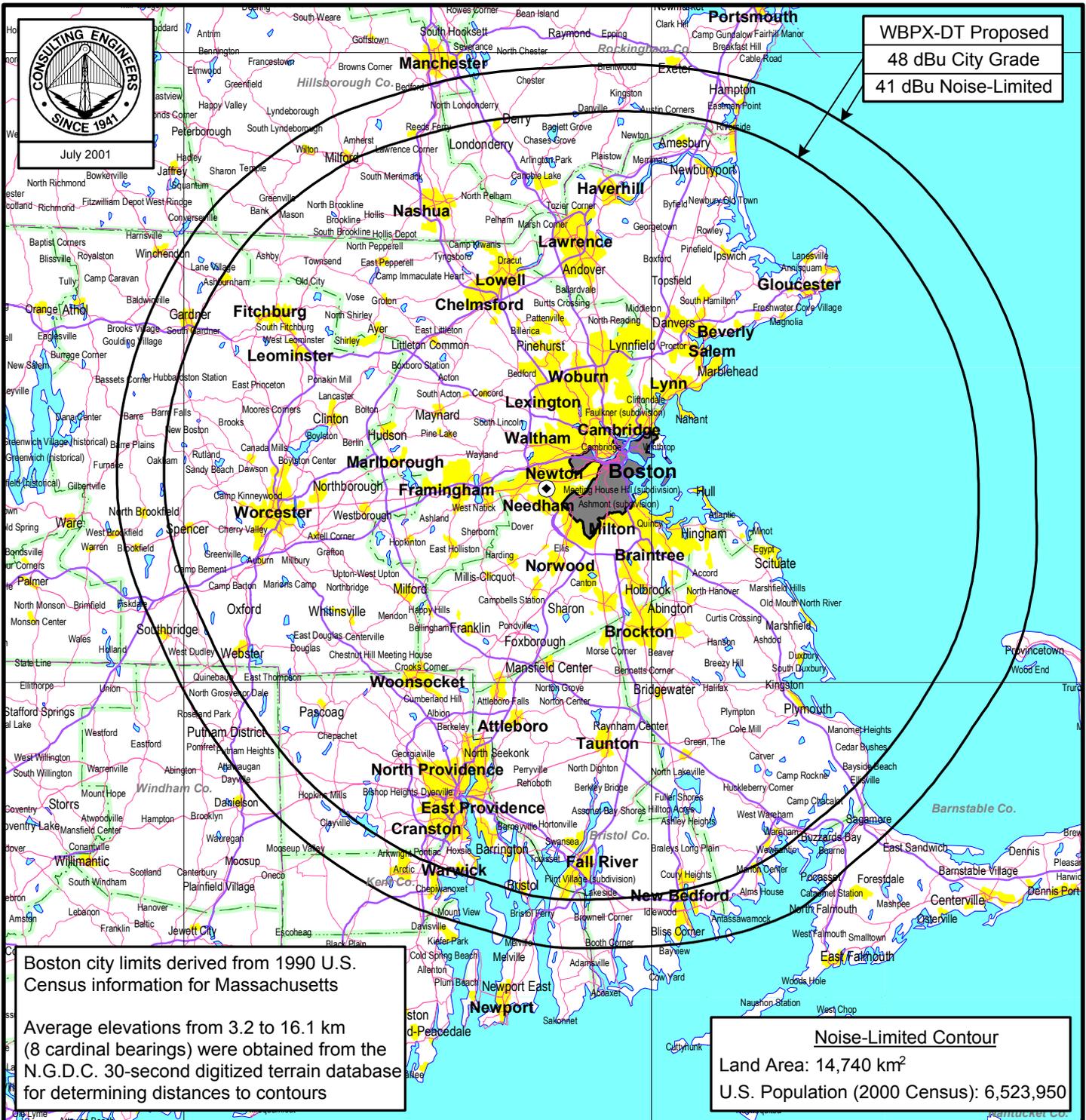
### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>24.0 (13.80 dB)</b>	Beam Tilt	<b>1.00 Degrees</b>
RMS Gain at Horizontal	<b>11.9 (10.76 dB)</b>	Frequency	<b>581.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24B240100-90</b>



Remarks:

Figure 3



**PREDICTED F(50,90) COVERAGE CONTOURS**

STATION WBPX-DT

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du Treil, Lundin & Rackley, Inc Sarasota, Florida

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Technical Specifications

Channel	32
Frequency	578-584 MHz
Proposed Site Coordinates (NAD 27)	42° 18' 27" North Latitude 71° 13' 27" West Longitude
Site Elevation above mean sea level	30.2 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	41.6 m
Overall height of antenna structure	
Above ground	381.0 m
Above mean sea level	411.2 m
Height of antenna radiation center	
Above ground	274.3 m
Above mean sea level	304.5 m
Above average terrain	263 m
Transmitter rated power output (average)	20 kW
Transmission line	Dielectric 4" (562174)
Length	(1000 ft) 305 m
Efficiency (1.625 dB loss)	68.8%
Antenna	Dielectric TFU-24DSB-C (C)
Polarization	Horizontal
Peak Power Gain	50.4
Beam Tilt (electrical)	1.0±
Main Lobe	115° T

Proposed Operation

Transmitter output power (average)	16.15 kW
Transmission line loss	5.04 kW
Antenna input power	11.11 kW
Maximum Effective Radiated Power (MAX-DA)	560 kW