

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of CONNECTICUT PUBLIC BROADCASTING, INC., licensee of full-power digital television station WEDW-DT, Channel 49 in Bridgeport, Connecticut, in support of its application for modification of Construction Permit 0000025204, which authorizes operation on its post-repack channel, Channel 21. It is proposed herein to increase the effective radiated power of the station and operate from a new transmitter site.

It is proposed to mount an ERI directional, elliptically-polarized slotted cylinder antenna at the 122.8-meter level of an existing tower located near Stamford, Connecticut. The proposed horizontal effective radiated power for the facility is 1000 kW. Exhibit B is a map upon which the predicted service contours are plotted. As shown, the community of Bridgeport is completely encompassed by the proposed 48 dBu city-grade service contour.

Elevation and azimuth pattern information for the proposed antenna are provided in Exhibit C. Exhibit D contains the summary results from a TVStudy interference study, which was conducted using a cell size of 2 kilometers and increment spacing of 1.0 kilometer. It concludes that the proposed WEDW-DT facility meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A facilities.

A power density calculation appears as Exhibit E.

Since it is proposed to increase the overall height of the existing tower to accommodate the addition of the WEDW-DT antenna, the Federal Aviation Administration will be notified of this application.

EXHIBIT A

The Federal Communications Commission issued Antenna Structure Registration Number 1043497 to this tower, and this record will be modified to reflect the increase in overall height once a Determination of No Hazard is received by the tower owner.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read 'K. T. Fisher', with a stylized, elongated final stroke.

KEVIN T. FISHER

November 1, 2017

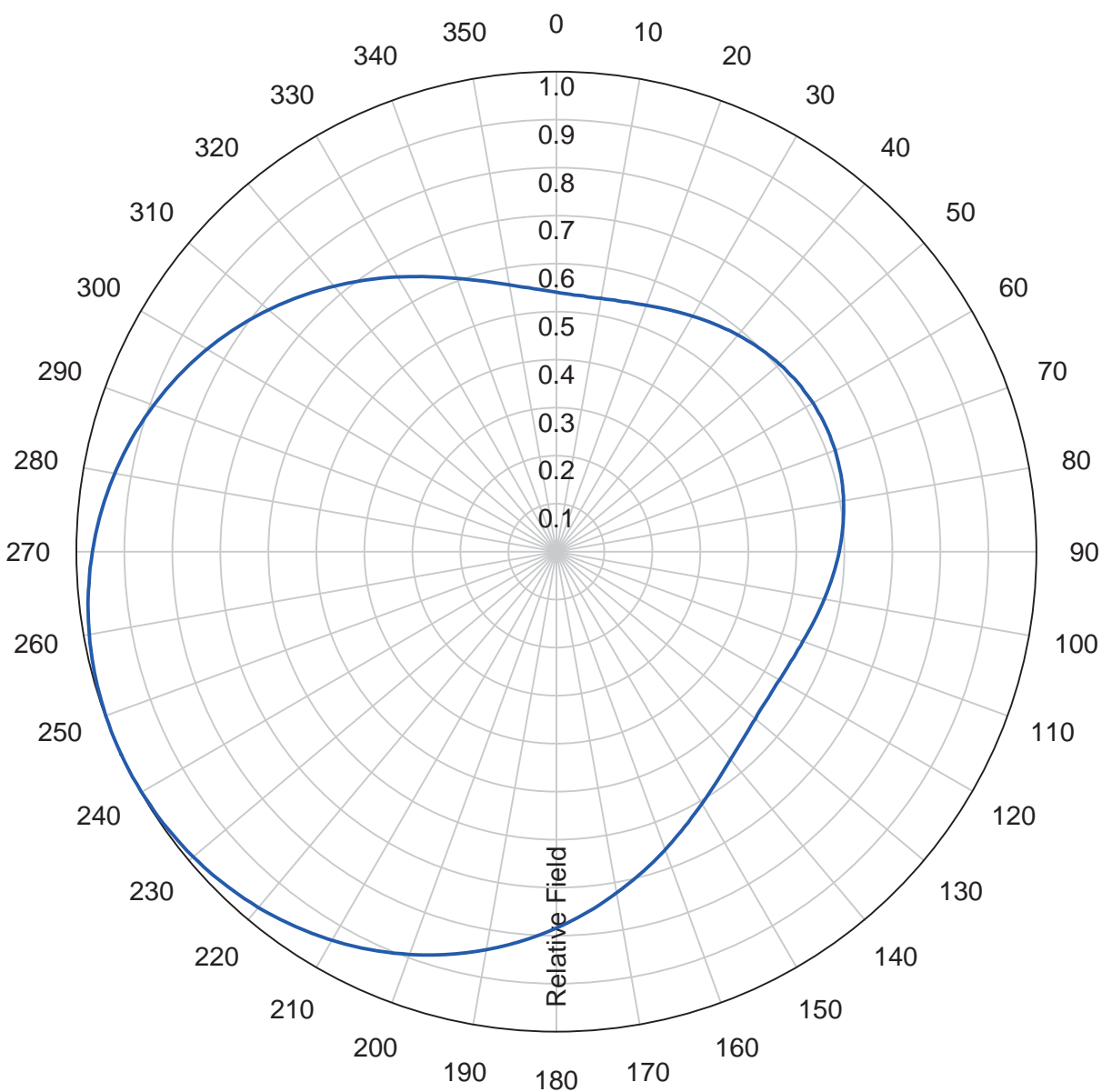
CONTOUR POPULATION  
2015 U.S. CENSUS DATA  
CITY-GRADE : 16,268,175 (6,298,377 HH)  
NOISE-LIMITED : 17,645,942 (6,828,610 HH)



**EXHIBIT B**  
**PREDICTED SERVICE CONTOURS**  
**PROPOSED WEDW-DT**  
**CH. 21 - BRIDGEPORT, CONNECTICUT**

**AZIMUTH PATTERN****Type:**ATW-S**Channel:**21**Directivity:**NumericdBd**Location:**Stamford CT**Peak(s) at:**1.832.62**Polarization:**Horizontal

Note: Pattern shape and directivity may vary with channel and mouting configuration.



*Preliminary, subject to final design and review.*

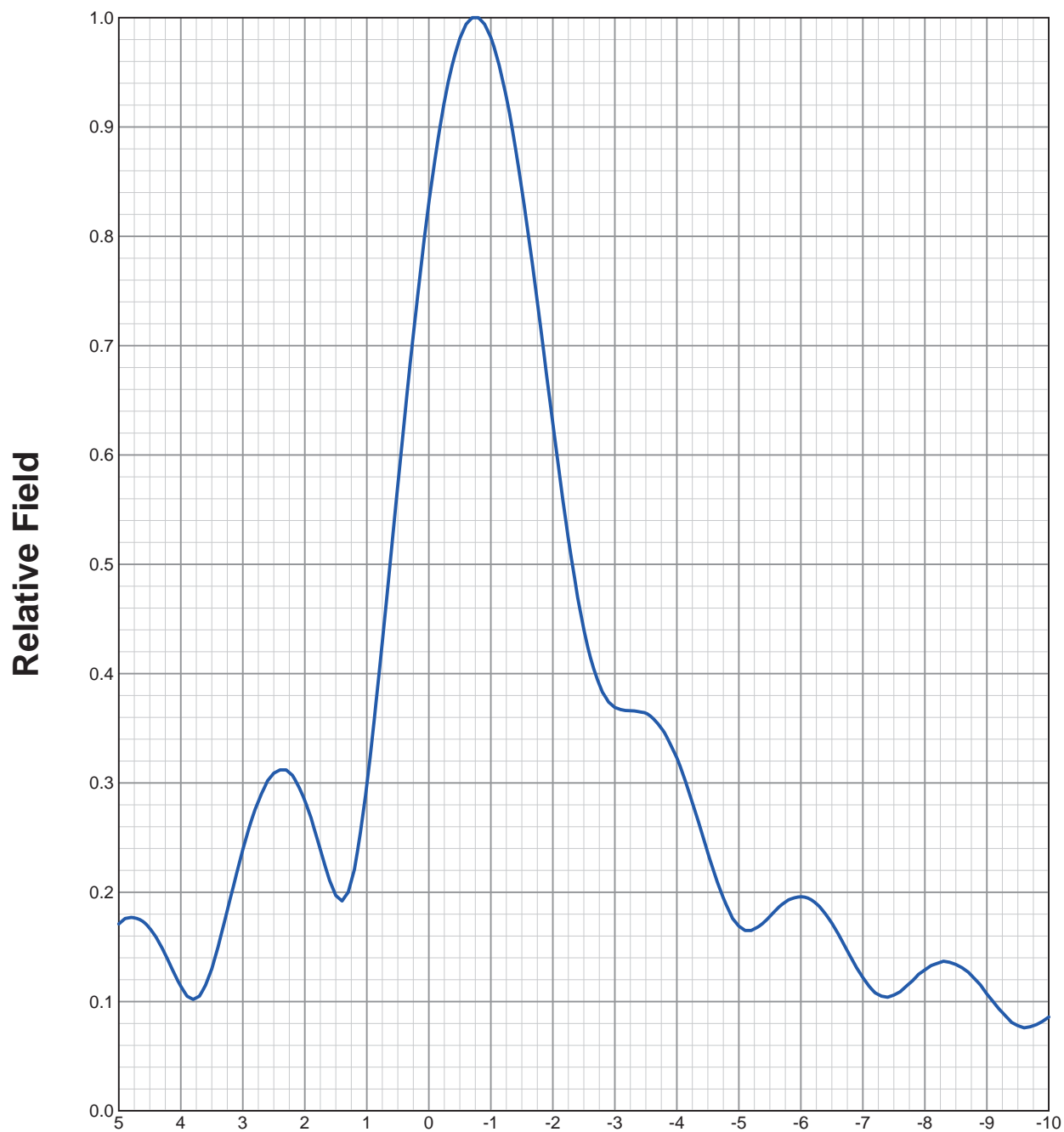
## **TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT**

Type: ATW-S

PolarizationHorizontal

<b>ANGLE</b>	<b>FIELD</b>	<b>ERP (kW)</b>	<b>ERP (dBk)</b>
0	0.541	292.681	24.664
10	0.536	287.296	24.583
20	0.546	298.116	24.744
30	0.567	321.489	25.072
40	0.589	346.921	25.402
50	0.607	368.449	25.664
60	0.618	381.924	25.820
70	0.618	381.924	25.820
80	0.607	368.449	25.664
90	0.589	346.921	25.402
100	0.567	321.489	25.072
110	0.546	298.116	24.744
120	0.536	287.296	24.583
130	0.541	292.681	24.664
140	0.565	319.225	25.041
150	0.606	367.236	25.649
160	0.661	436.921	26.404
170	0.722	521.284	27.171
180	0.784	614.656	27.886
190	0.842	708.964	28.506
200	0.893	797.449	29.017
210	0.935	874.225	29.416
220	0.967	935.089	29.709
230	0.988	976.144	29.895
240	0.999	998.001	29.991
250	0.999	998.001	29.991
260	0.988	976.144	29.895
270	0.967	935.089	29.709
280	0.935	874.225	29.416
290	0.893	797.449	29.017
300	0.842	708.964	28.506
310	0.784	614.656	27.886
320	0.722	521.284	27.171
330	0.661	436.921	26.404
340	0.606	367.236	25.649
350	0.565	319.225	25.041

*Preliminary, subject to final design and review.*

**ELEVATION PATTERN****Type:****ATW24H3H****Channel:****21****Directivity:****Numeric****dBd****Location:****Stamford CT****Main Lobe:****24.00****13.80****Beam Tilt:****-0.75****Horizontal:****16.57****12.19****Polarization:****Horizontal***Preliminary, subject to final design and review.*

## EXHIBIT D

### TVSTUDY INTERFERENCE ANALYSIS RESULTS PROPOSED WEDW-DT CHANNEL 21 – BRIDGEPORT, CONNECTICUT

Study created: 2017.11.02 11:29:47

Study build station data: LMS TV 2017-10-24 (1)

Proposal: WEDW D21 DT CP BRIDGEPORT, CT

File number: BLANK0000025204

Facility ID: 13594

Station data: User record

Record ID: 105

Country: U.S.

Zone: I

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WSBK-TV	D21	DT	APP	BOSTON, MA	BLANK0000024678	238.4 km
WSBK-TV	D21	DT	BL	BOSTON, MA	DTVBL73982	238.4
WFXQ-CD	D21	DC	CP	SPRINGFIELD, MA	BLANK0000027611	153.5
WFXQ-CD	D21	DC	BL	SPRINGFIELD, MA	DTVBL2650	153.5
WMPT	D21	DT	APP	ANNAPOLIS, MD	BLANK0000029874	344.5
WDVB-CD	D22	DC	CP	EDISON, NJ	BLANK0000025114	49.1
WDVB-CD	D22	DC	BL	EDISON, NJ	DTVBL168834	49.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D21

Latitude: 41 3 10.20 N (NAD83)

Longitude: 73 33 47.00 W

Height AMSL: 138.0 m

HAAT: 219.0 m

Peak ERP: 1000 kW

Antenna: ERI ATW24H3-ETS-21H AT 245 DEGREES TRUE 0.0 deg

Elev Pattn: Generic

Elec Tilt: 0.75

39.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	293 kW	49.2 m	60.0 km
45.0	358	85.0	68.0
90.0	347	134.6	73.7
135.0	306	137.1	73.2
180.0	615	136.7	77.2
225.0	956	134.9	79.7
270.0	935	63.1	69.3
315.0	567	20.4	56.6

Database HAAT does not agree with computed HAAT

Database HAAT: 219 m    Computed HAAT: 95 m

\*\*Proposal service area extends beyond baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 390.7 km

Distance to Mexican border: 2722.6 km

Conditions at FCC monitoring station: Laurel MD

Bearing: 233.9 degrees    Distance: 347.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 278.4 degrees    Distance: 2659.1 km

No land mobile station failures found

Study cell size: 2.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

\*\*MX with scenario 1, receives 3.05% interference

\*\*MX with BLANK0000029874 APP, 3.00% interference, scenario 2

\*\*MX with scenario 3, receives 15.55% interference

\*\*MX with BLANK0000029874 APP, 15.50% interference, scenario 4



POWER DENSITY CALCULATION

PROPOSED WEDW-DT  
CHANNEL 21 – BRIDGEPORT, CONNECTICUT  
[MODIFICATION OF CONSTRUCTION PERMIT 0000025204]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Bridgeport facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1000 kW (H,V), an antenna radiation center 122.8 meters above ground, and the specific elevation pattern of the proposed ERI antenna, maximum power density two meters above ground of  $0.015 \text{ mW/cm}^2$  is calculated to occur 30 meters west-southwest of the base of the tower. Since this is only 4.5 percent of the  $0.34 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 21 (512-518 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.