

ENGINEERING STATEMENT  
MODIFICATION OF CONSTRUCTION PERMIT  
(FCC FILE NO. BMPCDT-20040802BDC)  
ON BEHALF OF  
NEXSTAR BROADCASTING, INC.  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW MAX DA ERP 304 METERS HAAT

MARCH 2007

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington )  
 ) ss  
District of Columbia )

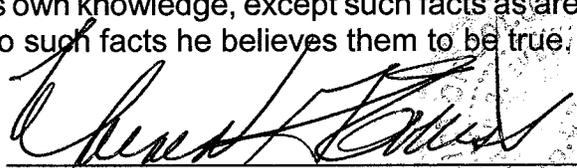
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

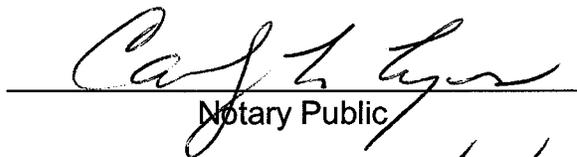
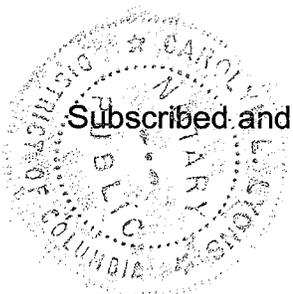
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 27<sup>th</sup> day of March, 2007.

  
Notary Public

My Commission Expires: 2/29/2008

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington )  
 ) ss  
District of Columbia )

Martin R. Doczkat being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

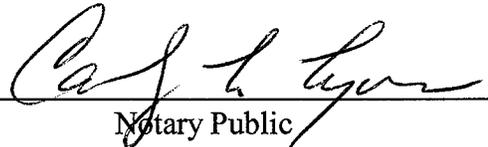
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



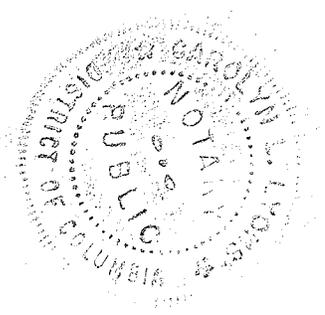
Martin R. Doczkat

Subscribed and sworn to before me this 27<sup>th</sup> day of March, 2007.



Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Nexstar Broadcasting, Inc., licensee of WJET-TV, Erie, Pennsylvania. The purpose of this engineering statement is to accompany its request to modify its outstanding construction permit (FCC File No. BMPCDT-20040802BDC) for digital television (“DTV”) facilities and to supplement those data required in FCC Form 301, Section III-D.

WJET-TV operates on NTSC Television Channel 24 with a maximum visual horizontal effective radiated power (“ERP”) of 1120 kW directional and a height above average terrain (“HAAT”) of 290 meters. WJET-TV is proposed to be allocated post-transition DTV Channel 24 with facilities of 523 kW maximum directional ERP and HAAT of 310 meters in the proposed DTV Table of Allotments.<sup>1</sup> WJET-DT has been authorized to construct DTV facilities of 1000 kW directional ERP (horizontal polarization) is allotted DTV Channel 58 at a HAAT of 309.6 meters on its existing antenna structure, however, WJET-DT now proposes to construct DTV facilities on its post-transition Channel 24 with 523 kW directional ERP (horizontal polarization) at an HAAT of 304 meters at the existing WJET-TV tower site.

There is one AM station located within 3.22 km of the existing WJET-TV tower site. There are two FM and with the exception of WJET-TV no other full-service NTSC stations located and transmitting within 100 meters from this site. WFXP-DT, Channel 22, Erie, Pennsylvania, is also proposed to operate from the existing WJET-TV tower site.

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<sup>1</sup>“In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service”, MM Docket No. 87-286, Seventh Further Notice of Proposed Rule Making (FCC06-150), 10/20/2006, Proposed DTV Table of Allotments Information, Appendix B.

The post-transition DTV antenna will be top-mounted on the existing tower having a total overall structure height above ground of 248.9 meters (817 feet). The existing transmitter site is located at 8455 Peach Street, Erie, Pennsylvania.

Since there is no change in overall height, FAA airspace approval is not required. The tower registration number of the existing tower is 1033280. Exhibit E-1 is a diagram of the existing tower and the proposed transmitting antenna.

North Latitude: 42° 02' 25"

West Longitude: 80° 04' 09"

NAD-27

#### Equipment Data

Antenna: ERI, Type ATW28H3-HTCX-24S (or equivalent) top-mounted, horizontally polarized antenna with 0.75° electrical beam tilt and 0.25° mechanical tilt at a bearing of N 120° E, T. The horizontal and vertical plane patterns and other exhibits required by Section 73.625(c) are herein included as Exhibit E-2.

#### Power Data

Transmitter output	12.22 kW	10.88 dBk
Dielectric, Type EIA/DCA 6-1/8", 75 ohm or equivalent-length 243.8 meters (800 ft)	81.3%	0.90 dB
Input power to the antenna	9.94 kW	9.98 dBk
Antenna power gain, Main Lobe	52.64	17.21 dB
Effective Radiated Power, Maximum	523 kW	27.19 dBk

Elevation Data

Vertical dimension of Channel 24 top-mounted antenna including beacon and lightning rod	14.1 meters 46.4 feet
Overall height above ground of the proposed antenna structure including beacon and lightning rod	248.9 meters 817 feet
Center of radiation of Channel 24 antenna above ground	236.8 meters 777 feet
Elevation of site above mean sea level	397.8 meters 1305 feet
Center of radiation of Channel 24 antenna above mean sea level	634.6 meters 2082 feet
Overall height above mean sea level of proposed tower including beacon and lightning rod	646.7 meters 2122 feet
Antenna height above average terrain	304 meters

NOTE: Slight height differences result due to conversion to metric.

Allocation

An allocation study from the proposed site has not been performed as the predicted F(50,90) 41 dBu contour of the proposed DTV facilities at the currently authorized site are expected to be reasonably within the predicted F(50,90) 41 dBu contour of the WJET-DT authorized construction permit (FCC File No. BMPCDT-20040802BDC).

Coverage

The average elevation data for 3.2 to 16.1 km along each radial has been determined from the 3-second NGDC for the existing WJET-TV site. The F(50,90) DTV coverage contour has been

computed from reference to the propagation data for Channels 14-69, as published by the FCC in Figure 10b and Figure 10c, Section 73.699 of the FCC Rules and Regulations. Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights shown on the attached tabulations, the depression angle,  $A_n$ , for each azimuth has been calculated. The maximum radiation value has been used to calculate ERP and to determine coverage where the vertical radiation pattern at these angles is greater than 90% of the maximum.

Table I includes the distances along the radials to the predicted F(50,90) 48 and 41 dBu contours, the average elevation 3.2 to 16.1 km, and the effective antenna heights, using the resultant relative field horizontal plane pattern and corresponding 341.448 kW maximum ERP at the horizontal with electrical and mechanical tilt in accordance with Section 73.625(c) of the FCC Rules. The maximum ERP does not occur in the horizontal plane, and based on informal guidance from the FCC, the horizontal plane relative field pattern has been normalized due to the use of a combination mechanical tilt and electrical tilt and the maximum ERP at the horizontal has been specified in FCC Form 301, Section III-D, despite the herein proposed 523 kW maximum ERP. Table II provides the distances along each radial to the limits of the F(50,90) 48 and 41 dBu contours using the resultant relative field and electrical and mechanical tilt and 523 kW maximum ERP at the radio horizon as specified in Section 73.625(b).

FCC Public Notice, Dated August 3, 2004

The directional azimuth pattern of the proposed WJET-DT antenna in the Proposed DTW Table of Allotments<sup>2</sup> is sharply curtailed to the north towards Canada and to the southeast towards WATM-DT, Channel 24, Altoona, Pennsylvania. Significant effort has been directed including

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<sup>2</sup>Ibid.

discussions with major antenna manufacturers to achieve a directional pattern equivalent to that authorized in the outstanding construction permit, and a proposed directional pattern which will conform to this directional pattern in the outstanding construction permit cannot be realized. Therefore, the procedure outlined in the FCC Public Notice<sup>3</sup> dated August 3, 2004, has been adopted, whereby the Commission indicated it would accept for filing requests to modify authorized DTV facilities which do not increase service area beyond the coverage area of the station's authorized DTV construction permit. Since WJET-TV is licensed to operate on Channel 24 and WJET-DT is authorized to construct DTV facilities on Channel 58 with post-transition DTV operation proposed on WJET-TV's Channel 24, this proposed post-transition operation of WJET-DT on Channel 24 presumes that it may not exceed the coverage area of the DTV Channel 24 facilities in the proposed DTV Table of Allotments.

Based upon that approach and utilizing both mechanical and electrical tilt, ERI has been able to develop a directional pattern which essentially remains within the coverage area predicted for the facilities described in the proposed DTV Table of Allotments. In addition, the proposed WJET-DT operation:

- provides in excess of 48 dBu over the entire principal community
- is presumed to not require renotification to Canada, except for notification of the type of service to be expected by WJET-DT on Channel 24 (digital instead of analog)

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<sup>3</sup>Public Notice entitled, "Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes".

Therefore, this application provides a best fit available through a major antenna manufacturer within the service in the proposed Table of Allotments for WJET-DT to comply with the August 3, 2004, FCC Public Notice, and therefore, presumably should not require recoordination with Canada.

#### Interference Analysis

An analysis of predicted interference caused by the proposed WJET-DT service has not been performed as the proposed F(50,90) 41 dBu contour is not predicted to substantially extend in any direction beyond that authorized by the F(50,90) 41 dBu contour of the outstanding construction permit (see Exhibit E-4).

The proposed facilities are not expected to exceed the assigned maximum ERP in the outstanding construction permit. Even so, action was taken to prevent any further interference than presently allowed within the WJET-DT outstanding construction permit in all directions including towards Canada. Therefore, the protection is in accordance with the second step contour overlap method as defined in the Letter of Understanding (“LOU”) between the FCC and Industry Canada, released September 29, 2000.

#### Other Licensed and Broadcast Facilities

Station WRIE(AM), 1260 kHz, Erie, PA is located within 3.22 km of the existing tower at the proposed WJET-DT site. However, the replacement of the existing DTV antenna for a new antenna will not change the electrical height of the existing tower. Therefore, the replacement of the existing DTV antenna should have no effect on the AM station.

NTSC Station WJET-TV, DTV station WFXP-DT, FM stations WXBB(FM), 94.7 MHz and WQHZ(FM), 102.3 MHz broadcast within 100 meters of the existing tower at the proposed

WJET-DT site. No other FM or full-service TV stations are located within 100 meters. WJET-TV will be replaced by the proposed WJET-DT operation post-transition.

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the applicant will install filters or take other measurements as necessary to resolve the problem.

#### RFF Levels at Tower Site

The radiofrequency field (“RFF”) two meters above the ground at the proposed WJET-DT tower site will be calculated. The RFF level study will include the following stations:

WJET-DT	Channel 24	DTV (Proposed)
WFXP-DT	Channel 22	DTV (Proposed)
WFGO(FM)	Channel 234A	FM
WQHZ(FM)	Channel 272A	FM

According to the FCC database, there are no other stations located within 100 meters of the site.

#### RFF Calculations

The RFF contribution of each broadcast station will be calculated using the following formula abstracted from OET Bulletin No. 65 dated August 1997:

$$S = \frac{33.4(F^2) \text{ Total ERP}}{R^2}$$

where:

S = power density in  $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for DTV Stations and FM Stations.

ERP =  $[0.4ERP_V + ERP_A]$  for NTSC Stations

ERP<sub>V</sub> = peak visual ERP in watts

ERP<sub>A</sub> = RMS aural ERP in watts

### Total ERP

The broadcast stations are operating or propose to operate with the following ERP values:

<u>Station</u>	<u>ERP Horizontal</u> (kW)	<u>ERP Vertical</u> (kW)	<u>Total ERP (H + V)</u> (watts)
WJET-DT (Proposed) Channel 24	523	0	523,000
WFXP-DT (Proposed) (Channel 22)	850	0	850,000
WXBB(FM) (Channel 234A)	1.7	1.7	3,400
WQHZ(FM) (Channel 272A)	1.7	1.7	3,400

### Radiofrequency Field

The RFF will be calculated two meters above the ground at the base of the proposed WJET-DT operation on the existing WJET-TV tower. The RFF contributed by each station will be determined using the total ERP values and relative field values. FM stations are assumed to have a relative field value of 0.3, WJET-DT is proposed to have a relative field value of less than 0.1 from 10° to 90° below the horizontal, and WFXP-DT is assumed to have relative field value of less than 0.23. The antenna height above ground, minus two meters, is listed for each station. The RFF limit, based on an uncontrolled environment, will be calculated for each station. The percentage contribution of each station will also be provided.

<u>Station</u>	<u>Total ERP</u> (watts)	<u>RCAGL-2</u> (meters)	<u>F</u>	<u>S</u> ( $\mu\text{W}/\text{cm}^2$ )	<u>Uncontrolled</u> <u>Limit</u> ( $\mu\text{W}/\text{cm}^2$ )	<u>Percent</u> (%)
WJET-DT (Proposed) (Channel 24)	523,000	234.8	0.1	3.2	355	0.9
WFXP-DT (Proposed) (Channel 22)	850,000	216.5	0.23	32.0	347	9.3
WXBB(FM) (Channel 234A)	3,400	132.5	0.3	0.6	200	0.3
WQHZ(FM) (Channel 272A)	3,400	132.5	0.3	0.6	200	0.3

#### Total RFF at WFXP-DT Tower Site

The total percentage of RFF can be calculated by combining the percentage contribution of each station.

The total post-transition RFF contribution of all stations two meters above the ground at the base of the WJET-DT tower is no more than 10.8% of the FCC guidelines for an uncontrolled environment which is no more than 2.2% of the proposed FCC guidelines for a controlled environment.

Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the licensee indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing guyed tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

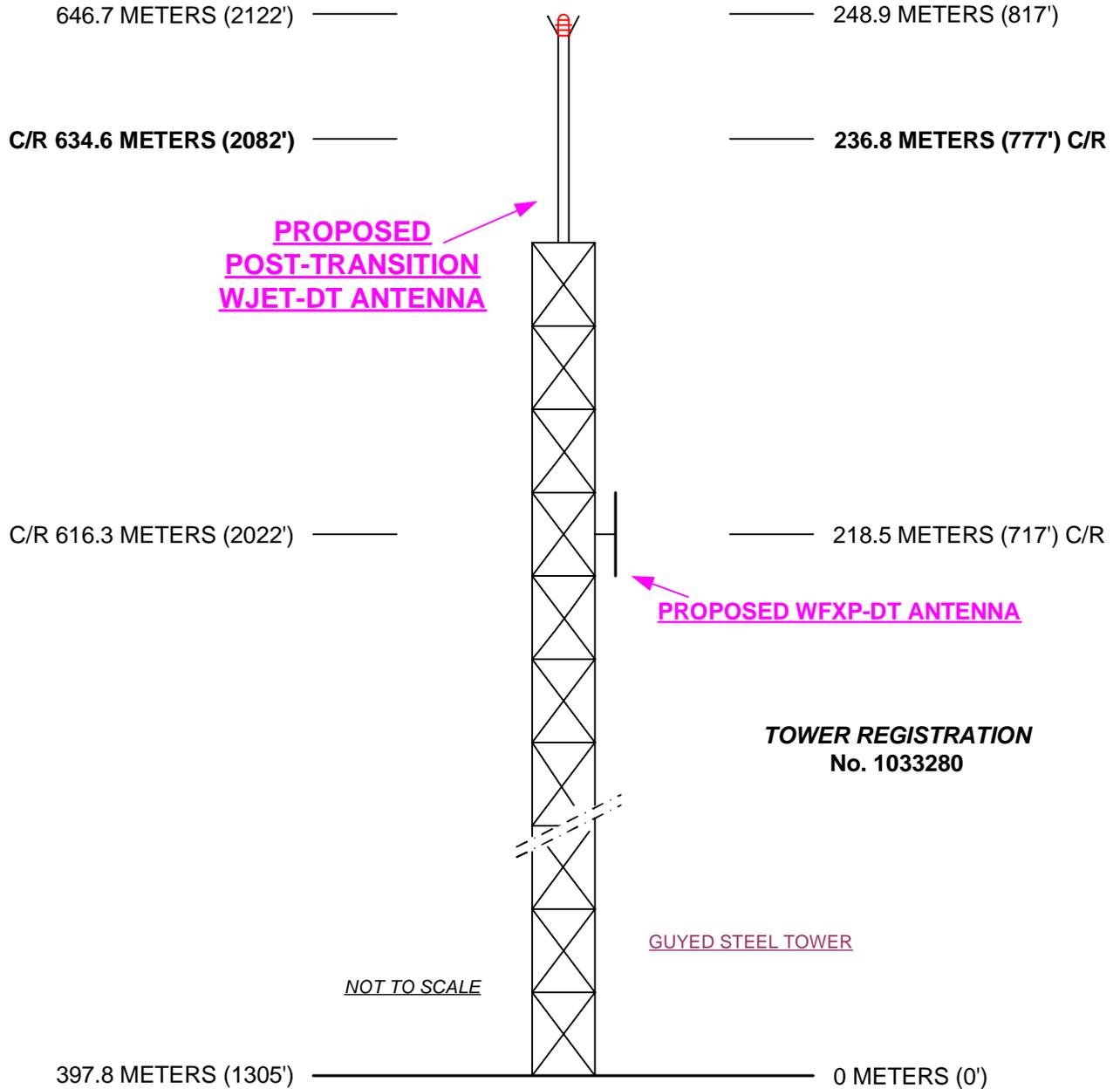


EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE PROPOSED DTV OPERATION OF  
**WJET-DT, ERIE, PENNSYLVANIA**

MARCH 2007

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

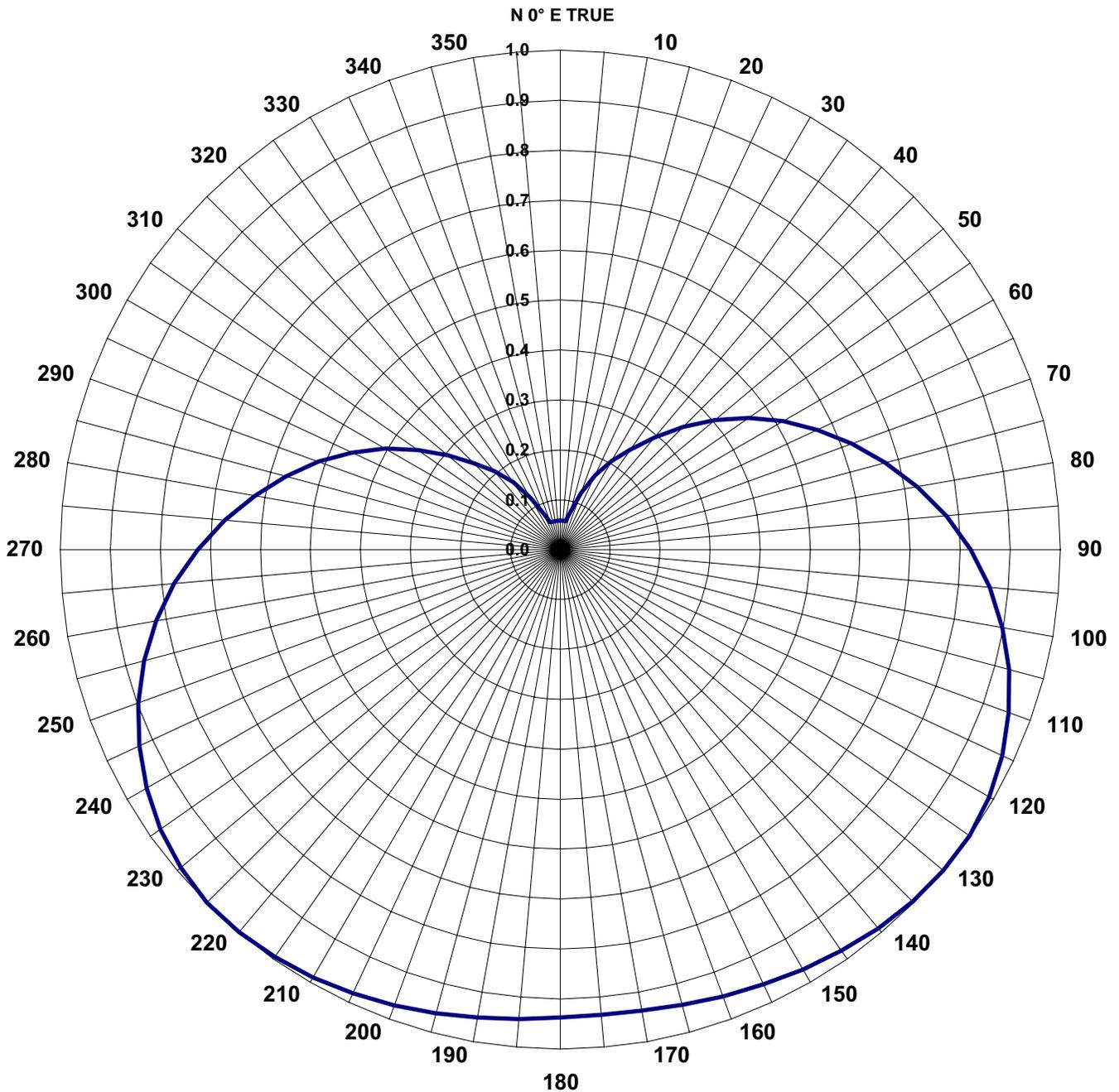
WJET-DT, ERIE, PENNSYLVANIA

### AZIMUTH PATTERN

**TYPE:** CH24HAZ-CX  
**Numeric** 1.88 **dB** 2.74  
**Directivity:** \_\_\_\_\_  
**Peak(s) at:** \_\_\_\_\_

**Frequency:** 24 (DTV)  
**Location:** Erie, PA  
**Polarization:** Horizontal

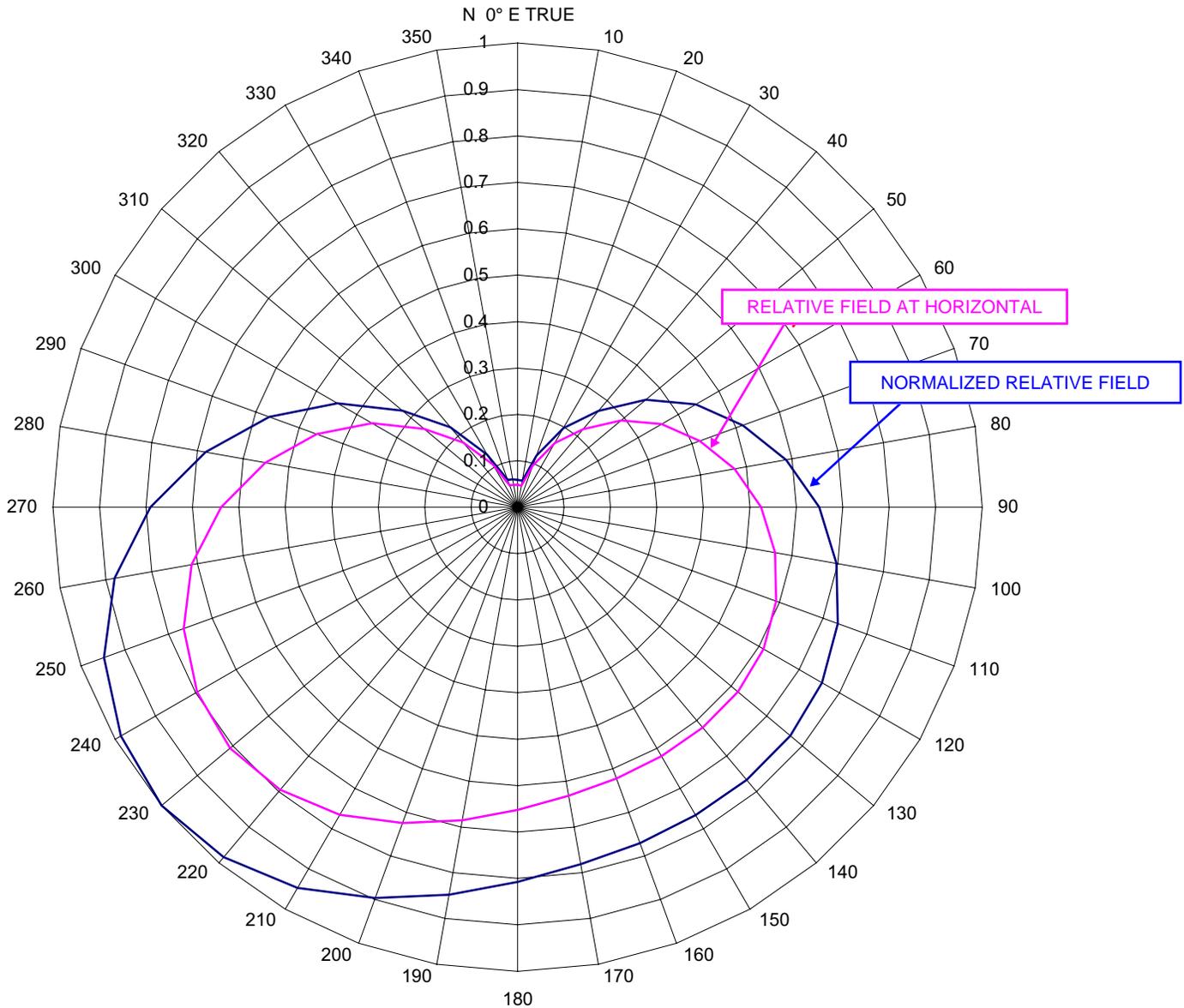
Note: Pattern shape and directivity may vary with channel and mounting configuration.



**TABULATED DATA FOR AZIMUTH PATTERN**

TYPE: CH24HAZ-CX

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.058	-24.73	92	0.837	-1.55	184	0.942	-0.52	276	0.662	-3.58
2	0.058	-24.73	94	0.854	-1.37	186	0.945	-0.49	278	0.641	-3.86
4	0.058	-24.73	96	0.869	-1.22	188	0.948	-0.46	280	0.620	-4.15
6	0.058	-24.73	98	0.884	-1.07	190	0.951	-0.44	282	0.599	-4.45
8	0.058	-24.73	100	0.898	-0.93	192	0.955	-0.40	284	0.578	-4.76
10	0.058	-24.73	102	0.910	-0.82	194	0.959	-0.36	286	0.557	-5.08
12	0.067	-23.48	104	0.923	-0.70	196	0.963	-0.33	288	0.536	-5.42
14	0.076	-22.38	106	0.934	-0.59	198	0.966	-0.30	290	0.515	-5.76
16	0.088	-21.11	108	0.945	-0.49	200	0.970	-0.26	292	0.493	-6.14
18	0.104	-19.66	110	0.955	-0.40	202	0.974	-0.23	294	0.471	-6.54
20	0.120	-18.42	112	0.963	-0.33	204	0.978	-0.19	296	0.449	-6.96
22	0.138	-17.20	114	0.972	-0.25	206	0.982	-0.16	298	0.426	-7.41
24	0.156	-16.14	116	0.979	-0.18	208	0.985	-0.13	300	0.404	-7.87
26	0.173	-15.24	118	0.985	-0.13	210	0.989	-0.10	302	0.382	-8.36
28	0.189	-14.47	120	0.991	-0.08	212	0.992	-0.07	304	0.359	-8.90
30	0.205	-13.76	122	0.994	-0.05	214	0.995	-0.04	306	0.337	-9.45
32	0.221	-13.11	124	0.997	-0.03	216	0.997	-0.03	308	0.315	-10.03
34	0.237	-12.51	126	0.999	-0.01	218	0.998	-0.02	310	0.293	-10.66
36	0.255	-11.87	128	1.000	0.00	220	1.000	0.00	312	0.274	-11.24
38	0.274	-11.24	130	1.000	0.00	222	1.000	0.00	314	0.255	-11.87
40	0.293	-10.66	132	0.998	-0.02	224	0.999	-0.01	316	0.237	-12.51
42	0.315	-10.03	134	0.997	-0.03	226	0.997	-0.03	318	0.221	-13.11
44	0.336	-9.47	136	0.995	-0.04	228	0.994	-0.05	320	0.205	-13.76
46	0.358	-8.92	138	0.992	-0.07	230	0.991	-0.08	322	0.189	-14.47
48	0.381	-8.38	140	0.989	-0.10	232	0.985	-0.13	324	0.173	-15.24
50	0.404	-7.87	142	0.985	-0.13	234	0.979	-0.18	326	0.156	-16.14
52	0.426	-7.41	144	0.982	-0.16	236	0.972	-0.25	328	0.138	-17.20
54	0.449	-6.96	146	0.978	-0.19	238	0.963	-0.33	330	0.120	-18.42
56	0.471	-6.54	148	0.974	-0.23	240	0.955	-0.40	332	0.104	-19.66
58	0.493	-6.14	150	0.970	-0.26	242	0.945	-0.49	334	0.088	-21.11
60	0.515	-5.76	152	0.966	-0.30	244	0.934	-0.59	336	0.076	-22.38
62	0.536	-5.42	154	0.962	-0.34	246	0.923	-0.70	338	0.067	-23.48
64	0.557	-5.08	156	0.958	-0.37	248	0.910	-0.82	340	0.058	-24.73
66	0.578	-4.76	158	0.955	-0.40	250	0.898	-0.93	342	0.058	-24.73
68	0.599	-4.45	160	0.951	-0.44	252	0.884	-1.07	344	0.058	-24.73
70	0.620	-4.15	162	0.948	-0.46	254	0.869	-1.22	346	0.058	-24.73
72	0.641	-3.86	164	0.945	-0.49	256	0.854	-1.37	348	0.058	-24.73
74	0.662	-3.58	166	0.942	-0.52	258	0.837	-1.55	350	0.058	-24.73
76	0.683	-3.31	168	0.939	-0.55	260	0.821	-1.71	352	0.058	-24.73
78	0.704	-3.05	170	0.937	-0.57	262	0.803	-1.91	354	0.058	-24.73
80	0.725	-2.79	172	0.936	-0.57	264	0.784	-2.11	356	0.058	-24.73
82	0.745	-2.56	174	0.935	-0.58	266	0.765	-2.33	358	0.058	-24.73
84	0.765	-2.33	176	0.935	-0.58	268	0.745	-2.56	360	0.058	-24.73
86	0.784	-2.11	178	0.936	-0.57	270	0.725	-2.79			
88	0.803	-1.91	180	0.937	-0.57	272	0.704	-3.05			
90	0.821	-1.71	182	0.939	-0.55	274	0.683	-3.31			



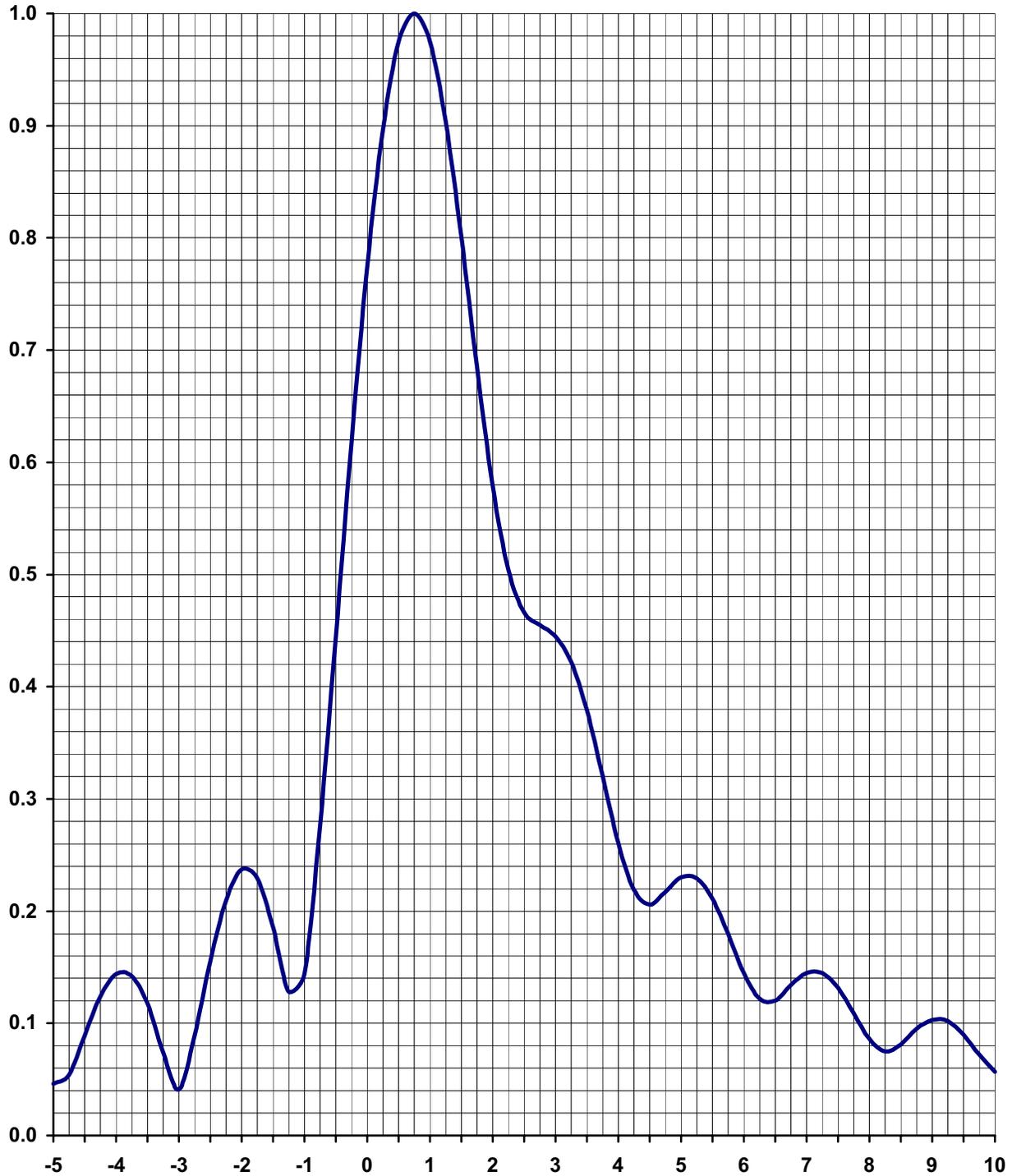
**EXHIBIT E-2c**  
**RESULANT RELATIVE FIELD AT THE HORIZONTAL**  
**CONSIDERING ELECTRICAL AND MECHANICAL TILT**  
**USING THE PROPOSED**  
**ERI, TYPE ATW28H3-HTCX-24S OR EQUIVALENT ANTENNA FOR**  
**WJET-DT, ERIE, PENNSYLVANIA**  
**CHANNEL 24 523 kW MAX DA ERP 304 METERS HAAT**  
**FEBRUARY 2007**

EXHIBIT E-2d  
RESULTANT RELATIVE FIELD AT THE HORIZONTAL  
CONSIDERING ELECTRICAL AND MECHANICAL TILT  
WITH A MAXIMUM ERP OF 341.448 KW AT THE HORIZONTAL  
FOR THE PROPOSED POST-TRANSITION OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW MAX DA ERP 304 METERS HAAT  
MARCH 2007

<u>Azimuth</u> N ° E, T	<u>Resultant</u> <u>Relative Field</u> <u>at Horizontal</u> <u>Considering</u> <u>Electrical and</u> <u>Mechanical Tilt</u>	<u>Resultant</u> <u>Relative Field</u> <u>Normalized</u> <u>to 1.0 (FCC</u> <u>Filing Format)</u>	<u>Azimuth</u> N ° E, T	<u>Resultant</u> <u>Relative Field</u> <u>at Horizontal</u> <u>Considering</u> <u>Electrical and</u> <u>Mechanical Tilt</u>	<u>Resultant</u> <u>Relative Field</u> <u>Normalized</u> <u>to 1.0 (FCC</u> <u>Filing Format)</u>
0	0.048	0.060	180	0.652	0.807
10	0.047	0.058	190	0.685	0.848
20	0.095	0.118	200	0.725	0.897
30	0.158	0.196	210	0.765	0.947
40	0.219	0.271	220	0.795	0.984
50	0.291	0.360	230	0.808	1.000
60	0.358	0.443	240	0.797	0.987
70	0.417	0.516	250	0.765	0.947
80	0.473	0.586	260	0.712	0.881
90	0.524	0.648	270	0.638	0.789
100	0.562	0.696	280	0.551	0.682
110	0.591	0.732	290	0.461	0.570
120	0.612	0.757	300	0.362	0.448
130	0.619	0.766	310	0.262	0.324
140	0.619	0.766	320	0.182	0.225
150	0.619	0.766	330	0.105	0.130
160	0.621	0.769	340	0.050	0.062
170	0.631	0.781	350	0.049	0.061

### ELEVATION PATTERN

<b>TYPE:</b>	<b>ATW28H3H</b>		<b>Frequency:</b>	<b>24 (DTV)</b>
<b>Directivity:</b>	<b>Numeric</b>	<b>dBd</b>	<b>Location:</b>	<b>Erie, PA</b>
<b>Main Lobe:</b>	<b>#####</b>	<b>#####</b>	<b>Beam Tilt:</b>	<b>0.75</b>
<b>Horizontal:</b>	<b>16.77</b>	<b>#####</b>	<b>Polarization:</b>	<b>Horizontal</b>



### TABULATED DATA FOR ELEVATION PATTERN

**ATW28H3H**

*-5 to 10 degrees in 0.25 increments    10 to 90 degrees in 0.50 increments*

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.000	0.046	-26.74	6.75	0.134	-17.46	27.00	0.036	-28.87	50.50	0.021	-33.56	74.00	0.016	-35.92
-4.750	0.054	-25.35	7.00	0.145	-16.77	27.50	0.028	-31.06	51.00	0.030	-30.46	74.50	0.009	-40.92
-4.500	0.089	-21.01	7.25	0.145	-16.77	28.00	0.018	-34.89	51.50	0.032	-29.90	75.00	0.006	-44.44
-4.250	0.124	-18.13	7.50	0.132	-17.59	28.50	0.026	-31.70	52.00	0.027	-31.37	75.50	0.011	-39.17
-4.000	0.144	-16.83	7.75	0.109	-19.25	29.00	0.035	-29.12	52.50	0.017	-35.39	76.00	0.017	-35.39
-3.750	0.142	-16.95	8.00	0.086	-21.31	29.50	0.031	-30.17	53.00	0.011	-39.17	76.50	0.023	-32.77
-3.500	0.118	-18.56	8.25	0.075	-22.50	30.00	0.019	-34.42	53.50	0.020	-33.98	77.00	0.028	-31.06
-3.250	0.074	-22.62	8.50	0.081	-21.83	30.50	0.022	-33.15	54.00	0.029	-30.75	77.50	0.031	-30.17
-3.000	0.041	-27.74	8.75	0.095	-20.45	31.00	0.032	-29.90	54.50	0.033	-29.63	78.00	0.033	-29.63
-2.750	0.089	-21.01	9.00	0.103	-19.74	31.50	0.033	-29.63	55.00	0.030	-30.46	78.50	0.035	-29.12
-2.500	0.155	-16.19	9.25	0.102	-19.83	32.00	0.022	-33.15	55.50	0.022	-33.15	79.00	0.035	-29.12
-2.250	0.209	-13.60	9.50	0.090	-20.92	32.50	0.017	-35.39	56.00	0.011	-39.17	79.50	0.034	-29.37
-2.000	0.237	-12.51	9.75	0.072	-22.85	33.00	0.027	-31.37	56.50	0.012	-38.42	80.00	0.032	-29.90
-1.750	0.229	-12.80	10.00	0.057	-24.88	33.50	0.033	-29.63	57.00	0.023	-32.77	80.50	0.030	-30.46
-1.500	0.186	-14.61	10.50	0.067	-23.48	34.00	0.027	-31.37	57.50	0.031	-30.17	81.00	0.028	-31.06
-1.250	0.128	-17.86	11.00	0.083	-21.62	34.50	0.016	-35.92	58.00	0.033	-29.63	81.50	0.025	-32.04
-1.000	0.144	-16.83	11.50	0.068	-23.35	35.00	0.020	-33.98	58.50	0.029	-30.75	82.00	0.022	-33.15
-0.750	0.276	-11.18	12.00	0.045	-26.94	35.50	0.030	-30.46	59.00	0.021	-33.56	82.50	0.020	-33.98
-0.500	0.444	-7.05	12.50	0.061	-24.29	36.00	0.030	-30.46	59.50	0.010	-40.00	83.00	0.017	-35.39
-0.250	0.617	-4.19	13.00	0.072	-22.85	36.50	0.021	-33.56	60.00	0.010	-40.00	83.50	0.015	-36.48
0.000	0.774	-2.23	13.50	0.055	-25.19	37.00	0.014	-37.08	60.50	0.021	-33.56	84.00	0.012	-38.42
0.250	0.896	-0.95	14.00	0.039	-28.18	37.50	0.024	-32.40	61.00	0.030	-30.46	84.50	0.011	-39.17
0.500	0.975	-0.22	14.50	0.055	-25.19	38.00	0.031	-30.17	61.50	0.035	-29.12	85.00	0.009	-40.92
0.750	1.000	0.00	15.00	0.061	-24.29	38.50	0.028	-31.06	62.00	0.034	-29.37	85.50	0.008	-41.94
1.000	0.975	-0.22	15.50	0.045	-26.94	39.00	0.018	-34.89	62.50	0.028	-31.06	86.00	0.007	-43.10
1.250	0.904	-0.88	16.00	0.033	-29.63	39.50	0.015	-36.48	63.00	0.019	-34.42	86.50	0.006	-44.44
1.500	0.801	-1.93	16.50	0.049	-26.20	40.00	0.026	-31.70	63.50	0.008	-41.94	87.00	0.005	-46.02
1.750	0.685	-3.29	17.00	0.052	-25.68	40.50	0.031	-30.17	64.00	0.009	-40.92	87.50	0.004	-47.96
2.000	0.579	-4.75	17.50	0.037	-28.64	41.00	0.028	-31.06	64.50	0.021	-33.56	88.00	0.003	-50.46
2.250	0.504	-5.95	18.00	0.029	-30.75	41.50	0.017	-35.39	65.00	0.031	-30.17	88.50	0.003	-50.46
2.500	0.466	-6.63	18.50	0.044	-27.13	42.00	0.015	-36.48	65.50	0.037	-28.64	89.00	0.002	-53.98
2.750	0.455	-6.84	19.00	0.047	-26.56	42.50	0.025	-32.04	66.00	0.039	-28.18	89.50	0.001	-60.00
3.000	0.445	-7.03	19.50	0.032	-29.90	43.00	0.031	-30.17	66.50	0.038	-28.40	90.00	0.000	---
3.250	0.422	-7.49	20.00	0.027	-31.37	43.50	0.028	-31.06	67.00	0.032	-29.90			
3.500	0.379	-8.43	20.50	0.041	-27.74	44.00	0.017	-35.39	67.50	0.023	-32.77			
3.750	0.321	-9.87	21.00	0.044	-27.13	44.50	0.013	-37.72	68.00	0.012	-38.42			
4.000	0.261	-11.67	21.50	0.031	-30.17	45.00	0.022	-33.15	68.50	0.003	-50.46			
4.250	0.219	-13.19	22.00	0.026	-31.70	45.50	0.029	-30.75	69.00	0.012	-38.42			
4.500	0.206	-13.72	22.50	0.038	-28.40	46.00	0.029	-30.75	69.50	0.023	-32.77			
4.750	0.217	-13.27	23.00	0.041	-27.74	46.50	0.020	-33.98	70.00	0.032	-29.90			
5.000	0.230	-12.77	23.50	0.029	-30.75	47.00	0.011	-39.17	70.50	0.038	-28.40			
5.250	0.229	-12.80	24.00	0.023	-32.77	47.50	0.018	-34.89	71.00	0.042	-27.54			
5.500	0.211	-13.51	24.50	0.034	-29.37	48.00	0.027	-31.37	71.50	0.043	-27.33			
5.750	0.180	-14.89	25.00	0.038	-28.40	48.50	0.031	-30.17	72.00	0.041	-27.74			
6.000	0.145	-16.77	25.50	0.028	-31.06	49.00	0.026	-31.70	72.50	0.037	-28.64			
6.250	0.122	-18.27	26.00	0.019	-34.42	49.50	0.016	-35.92	73.00	0.031	-30.17			
6.500	0.120	-18.42	26.50	0.030	-30.46	50.00	0.012	-38.42	73.50	0.024	-32.40			

TABLE I  
COMPUTED COVERAGE DATA  
AT THE HORIZONTAL CONSIDERING ELECTRICAL AND MECHANICAL TILT  
FOR PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW ERP 304 METERS HAAT  
MARCH 2007

<u>Radial</u> N ° E, T	<u>Average*</u>	<u>Effective</u>	<u>Depression</u>	<u>ERP At</u>	<u>Distance to Contour</u>	
	<u>Elevation</u> meters	<u>Height</u> meters	<u>Angle</u> degrees	<u>Horizontal</u> kW	<u>48 dBu</u> km	<u>41 dBu</u> km
0	216.8	417.8	0.566	1.2	50.6	60.1
10	230.4	404.2	0.557	1.2	50.0	59.3
20	247.8	386.8	0.545	4.7	57.4	66.3
30	282.8	351.8	0.520	13.1	61.3	70.3
40	324.6	310.0	0.488	25.1	62.5	71.0
50	370.2	264.4	0.450	44.3	62.8	70.6
60	401.7	232.9	0.423	67.0	62.9	70.4
70	410.3	224.3	0.415	90.9	63.8	71.3
80	407.4	227.2	0.417	117.2	65.1	72.8
90	411.3	223.3	0.414	143.4	65.8	73.5
100	416.7	217.9	0.409	165.4	66.1	73.9
110	412.5	222.1	0.413	183.0	66.9	74.7
120	407.2	227.4	0.418	195.6	67.5	75.5
130	403.5	231.1	0.421	200.4	67.9	75.9
140	393.4	241.2	0.430	200.4	68.5	76.7
150	411.1	223.5	0.414	200.4	67.4	75.3
160	403.6	231.0	0.421	201.9	67.9	75.9
170	426.8	207.8	0.399	208.2	66.5	74.4
180	423.2	211.4	0.403	222.3	67.1	75.0
190	424.5	210.1	0.402	245.4	67.5	75.4
200	403.1	231.5	0.421	274.7	69.4	77.7
210	392.3	242.3	0.431	306.1	70.6	79.3
220	372.0	262.6	0.449	330.5	72.4	82.0
230	346.6	288.0	0.470	341.4	74.8	85.7
240	309.9	324.7	0.499	332.6	78.1	90.0
250	305.1	329.5	0.503	306.1	78.1	89.8
260	296.3	338.3	0.510	265.1	78.0	89.6
270	268.8	365.8	0.530	212.6	79.1	90.4
280	245.7	388.9	0.546	158.8	78.9	89.8

TABLE I  
COMPUTED COVERAGE DATA  
AT THE HORIZONTAL CONSIDERING ELECTRICAL AND MECHANICAL TILT  
FOR PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW ERP 304 METERS HAAT  
MARCH 2007  
 (continued)

<u>Radial</u> N ° E, T	<u>Average*</u> <u>Elevation</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Horizontal</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>41 dBu</u> km
290	234.0	400.6	0.554	110.9	77.3	87.9
300	225.6	409.0	0.560	68.5	74.6	85.1
310	219.6	415.0	0.564	35.9	70.7	81.3
320	214.5	420.1	0.568	17.3	66.4	76.9
330	212.5	422.1	0.569	5.8	60.1	69.9
340	212.6	422.0	0.569	1.3	51.2	60.8
350	213.5	421.1	0.568	1.3	51.0	60.5

\*Based on data from FCC 3-second data base.

DTV Channel 24 (530-536 MHz)  
 Average Elevation 3.2 to 16.1 km 330.6 meters AMSL  
 Center of Radiation 634.6 meters AMSL  
 Antenna Height Above Average Terrain 304 meters  
 Effective Radiated Power 523 kW (27.19 dBk) Max  
 Electrical Tilt 0.75°  
 Mechanical Tilt 0.25° at N 120° E, T

North Latitude: 42° 02' 25"  
 West Longitude: 80° 04' 09"

(NAD-27)

TABLE II  
COMPUTED COVERAGE DATA  
AT THE RADIO HORIZON CONSIDERING ELECTRICAL AND MECHANICAL TILT  
FOR THE PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW ERP 304 METERS HAAT  
MARCH 2007

<u>Radial</u> N ° E, T	<u>Average*</u> <u>Elevation</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>41 dBu</u> km
0	216.8	417.8	0.566	1.8	52.9	62.3
10	230.4	404.2	0.557	1.8	52.4	61.6
20	247.8	386.8	0.545	7.5	60.0	69.1
30	282.8	351.8	0.520	22.0	64.0	73.5
40	324.6	310.0	0.488	44.9	65.5	74.3
50	370.2	264.4	0.450	85.4	66.0	73.9
60	401.7	232.9	0.423	138.7	66.3	74.0
70	410.3	224.3	0.415	161.7	66.4	74.2
80	407.4	227.2	0.417	214.9	67.9	76.0
90	411.3	223.3	0.414	267.4	68.7	76.9
100	416.7	217.9	0.409	310.9	69.1	77.4
110	412.5	222.1	0.413	349.1	69.9	78.4
120	407.2	227.4	0.418	376.1	70.6	79.3
130	403.5	231.1	0.421	385.9	71.0	79.8
140	393.4	241.2	0.430	386.8	71.7	80.8
150	411.1	223.5	0.414	372.6	70.3	78.9
160	403.6	231.0	0.421	370.8	70.8	79.5
170	426.8	207.8	0.399	363.8	69.1	77.5
180	423.2	211.4	0.403	459.2	70.4	79.2
190	424.5	210.1	0.402	473.0	70.5	79.3
200	403.1	231.5	0.421	492.1	72.2	81.6
210	392.3	242.3	0.431	511.6	73.1	83.0
220	372.0	262.6	0.449	523.0	74.8	85.7
230	346.6	288.0	0.470	513.6	77.2	89.2
240	309.9	324.7	0.499	477.0	80.5	93.0
250	305.1	329.5	0.503	421.7	80.2	92.5
260	296.3	338.3	0.510	352.5	79.9	91.9
270	268.8	365.8	0.530	274.9	80.9	92.4

TABLE II  
COMPUTED COVERAGE DATA  
AT THE RADIO HORIZON CONSIDERING ELECTRICAL AND MECHANICAL TILT  
FOR THE PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 24 523 KW ERP 304 METERS HAAT  
MARCH 2007  
 (continued)

<u>Radial</u> N ° E, T	<u>Average*</u>	<u>Effective</u>	<u>Depression</u>	<u>ERP At</u>	<u>Distance to Contour</u>	
	<u>Elevation</u> meters	<u>Height</u> meters	<u>Angle</u> degrees	<u>Radio</u> <u>Horizon</u> kW	<u>48 dBu</u> km	<u>41 dBu</u> km
280	245.7	388.9	0.546	201.0	80.4	91.5
290	234.0	400.6	0.554	138.7	78.8	89.5
300	225.6	409.0	0.560	85.4	76.1	86.6
310	219.6	415.0	0.564	44.9	72.2	82.7
320	214.5	420.1	0.568	22.0	67.9	78.4
330	212.5	422.1	0.569	7.5	61.6	71.5
340	212.6	422.0	0.569	1.8	53.0	62.5
350	213.5	421.1	0.568	1.8	53.0	62.5

\*Based on data from FCC 3-second data base.

DTV Channel 24 (530-536 MHz)  
 Average Elevation 3.2 to 16.1 km 330.6 meters AMSL  
 Center of Radiation 634.6 meters AMSL  
 Antenna Height Above Average Terrain 304 meters  
 Effective Radiated Power 523 kW (27.19 dBk) Max  
 Electrical Tilt 0.75°  
 Mechanical Tilt 0.25° at N 120° E, T

North Latitude: 42° 02' 25"  
 West Longitude: 80° 04' 09"

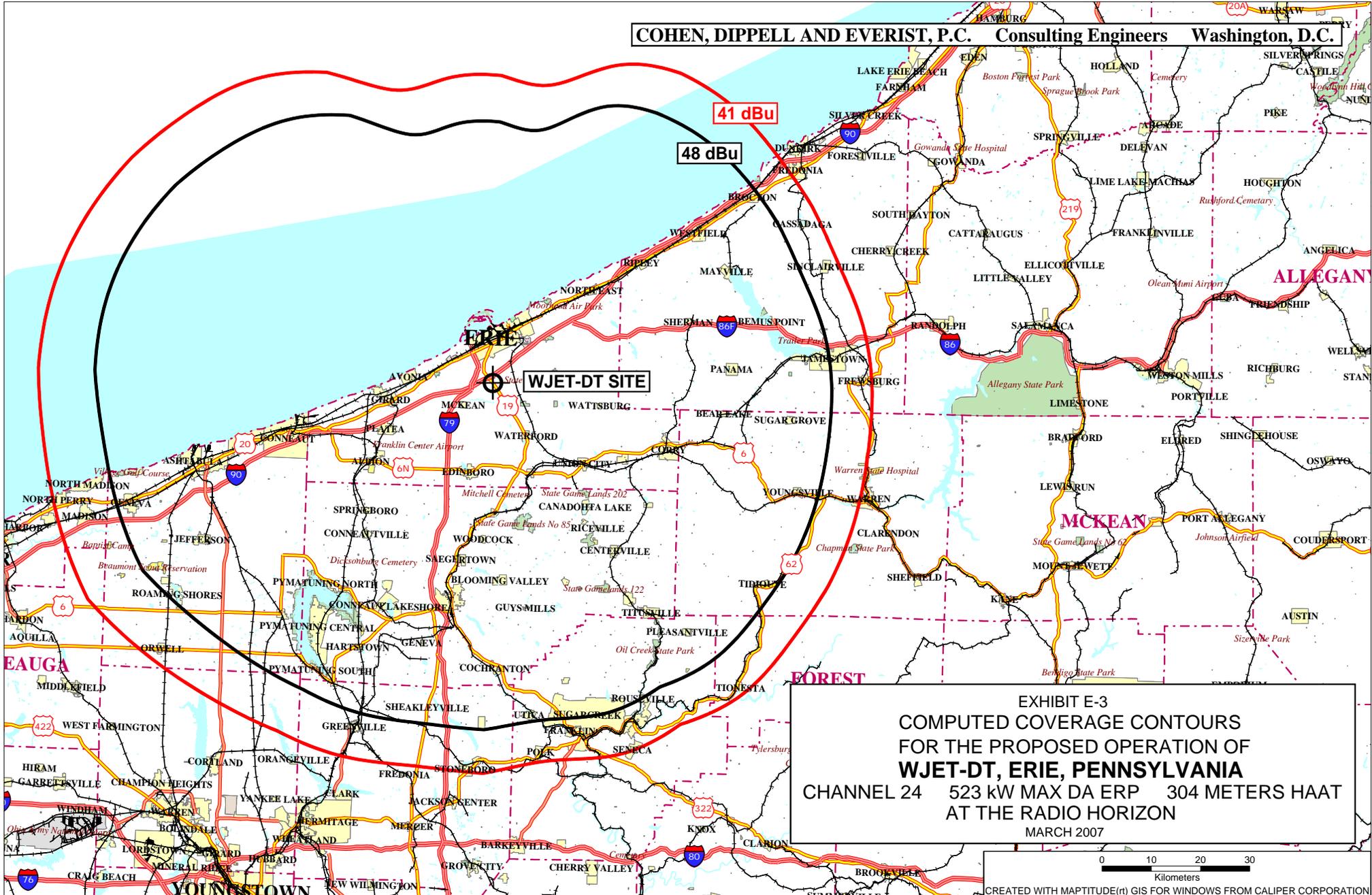


EXHIBIT E-3  
COMPUTED COVERAGE CONTOURS  
FOR THE PROPOSED OPERATION OF  
**WJET-DT, ERIE, PENNSYLVANIA**  
CHANNEL 24 523 kW MAX DA ERP 304 METERS HAAT  
AT THE RADIO HORIZON  
MARCH 2007

0 10 20 30  
Kilometers  
CREATED WITH MAPTITUDE(r) GIS FOR WINDOWS FROM CALIPER CORPORATION

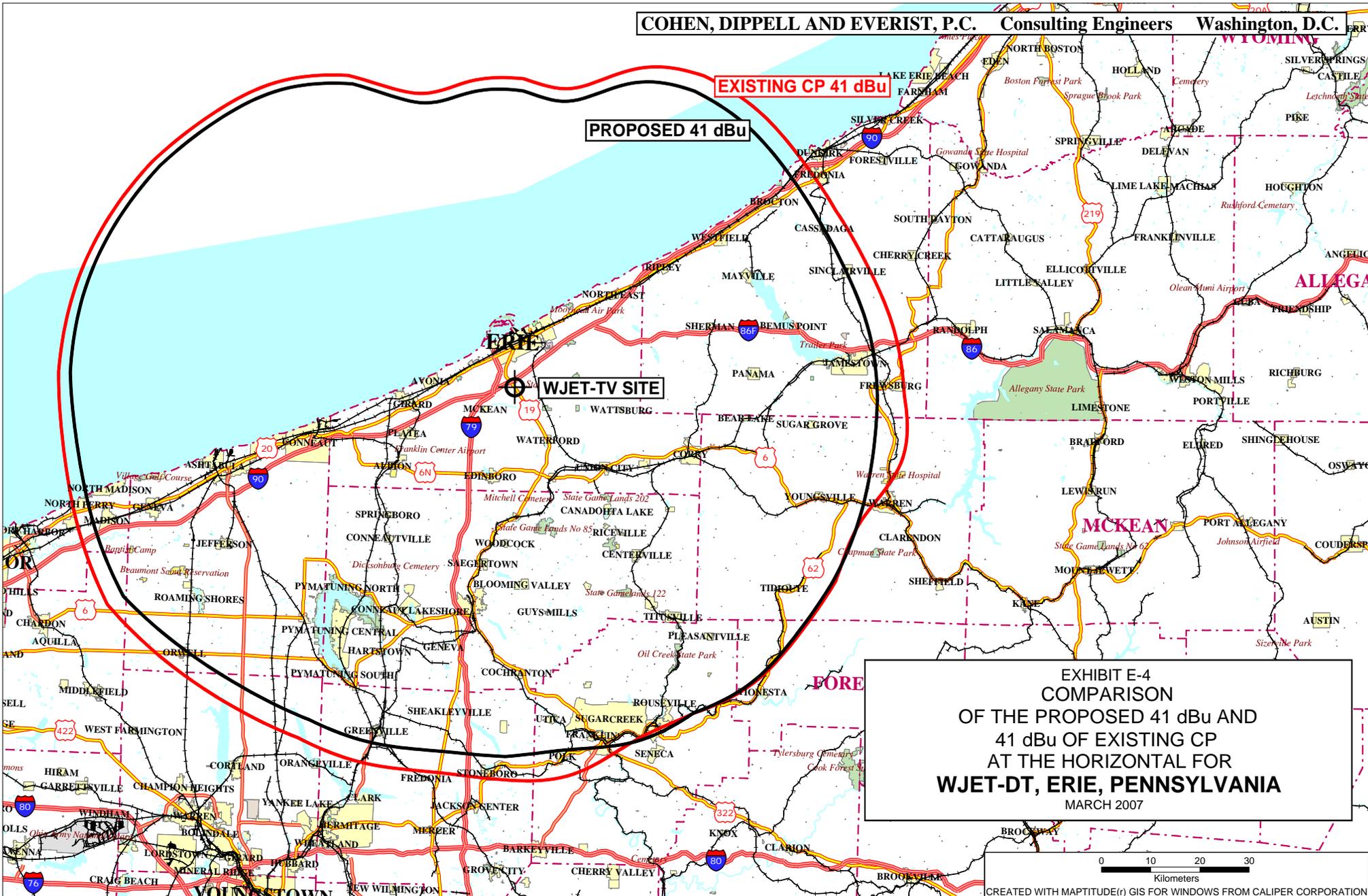


EXHIBIT E-4  
COMPARISON  
OF THE PROPOSED 41 dBu AND  
41 dBu OF EXISTING CP  
AT THE HORIZONTAL FOR  
WJET-DT, ERIE, PENNSYLVANIA  
MARCH 2007

**SECTION III-D - DTV Engineering**

**Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.**

**Certification Checklist:** A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

- (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.  Yes  No
- (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.  Yes  No
- (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.  Yes  No

2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307.  Yes  No

Applicant must **submit the Exhibit** called for in Item 13.

- 3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.  Yes  No
- 4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.  Yes  No
- 5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.  Yes  No

**SECTION III-D DTV Engineering**

**TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1. Channel Number: DTV \_\_\_\_\_ Analog TV, if any \_\_\_\_\_

2. Zone:  I  II  III

3. Antenna Location Coordinates: (NAD 27)

\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  N  S Latitude  
\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  E  W Longitude

4. Antenna Structure Registration Number: \_\_\_\_\_

Not applicable  FAA Notification Filed with FAA

5. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters

6. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters

7. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters

8. Height of Radiation Center Above Average Terrain: \_\_\_\_\_ meters

9. Maximum Effective Radiated Power (average power): \_\_\_\_\_ kW

10. Antenna Specifications:

a.	Manufacturer	Model
----	--------------	-------

b. Electrical Beam Tilt: \_\_\_\_\_ degrees  Not Applicable

c. Mechanical Beam Tilt: \_\_\_\_\_ degrees toward azimuth \_\_\_\_\_ degrees True  Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c).

Exhibit No.

d. Polarization:  Horizontal  Circular  Elliptical

**TECH BOX**

e. Directional Antenna Relative Field Values:  Not applicable (Nondirectional)  
 Rotation: \_\_\_\_\_ °  No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.")  Yes  No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

a. If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

**PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.**

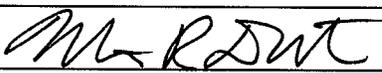
I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing	Typed or Printed Title of Person Signing
Signature	Date

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

### SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Martin R. Doczkat	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 	Date March 27, 2007	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100		
City Washington	State or Country (if foreign address) DC	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111	E-Mail Address (if available) cde@attglobal.net	

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