

ENGINEERING STATEMENT  
MODIFICATION OF CONSTRUCTION PERMIT  
RE DTV BROADCAST ENGINEERING DATA  
ON BEHALF OF  
NEXSTAR BROADCASTING, INC.  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 58 1000 KW DA ERP 309.6 METERS HAAT

JULY 2004

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         )

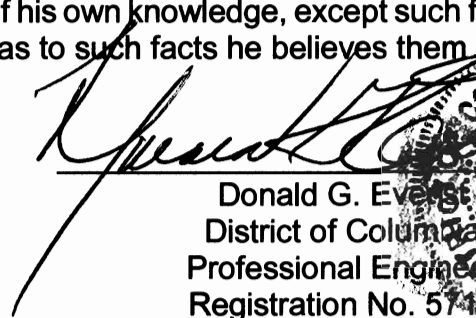
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

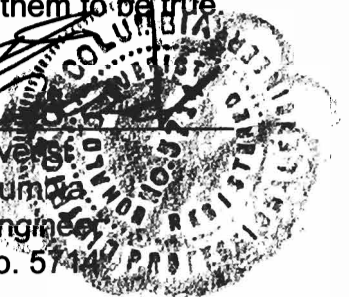
He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

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

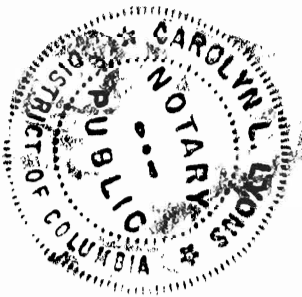
That the attached engineering report was prepared by him or under his supervision and direction and

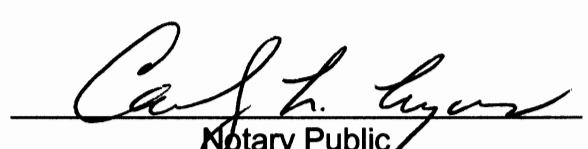
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
\_\_\_\_\_  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 57142



Subscribed and sworn to before me this 30<sup>th</sup> day of July, 2004.



  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2008

COHEN, DIPPELL AND EVERIST, P. C.

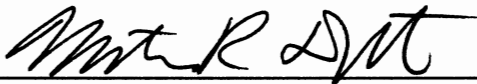
City of Washington                    )  
  ) ss  
District of Columbia                )

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

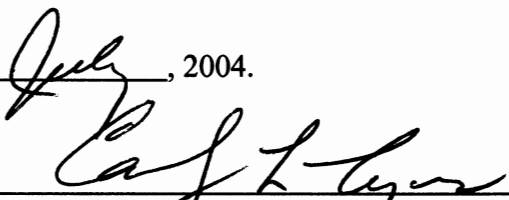
He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

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 30th day of July, 2004.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Nexstar Broadcasting, Inc., permittee of WJET-DT, Erie, Pennsylvania. The purpose of this engineering statement is to accompany its request to modify its outstanding construction permit (BPCDT-19991101AKH) 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 (849.7 feet). WJET-TV has been allocated DTV Channel 58 with facilities of 50 kW maximum directional and HAAT of 290 meters in the revised DTV Table of Allotments.<sup>1</sup> WJET-DT proposes to construct DTV facilities of 1000 kW directional (horizontal polarization) at a HAAT of 309.6 meters on its existing antenna structure.

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. DTV station WFXP-DT, Channel 22, Erie, Pennsylvania, currently broadcasts with Special Temporary Authority (STA) from an adjacent tower also within 100 meters of the proposed WJET-DT site.

The DTV antenna will be top-mounted on the existing tower having a total overall structure height above ground of 248.9 meters (816.6 feet). The existing transmitter site is located at 8455 Peach Street, Erie, Pennsylvania.

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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, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order (FCC 98-24), 2/12/98, DTV Table of Allotments, Appendix B.

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-58S (or equivalent) top-mounted, horizontally polarized antenna with 0.75° electrical beam tilt. The vertical plane pattern and other exhibits required by Section 73.625(c) are herein included as E-2a through E-2e

Power Data

Transmitter output	24.18 kW	13.83 dBk
MACX675B, 6-1/8", 75 ohm or equivalent—length 259.1 meters (850.0 ft)	78.5%	1.05 dB
Input power to the antenna	18.97 kW	12.78 dBk
Antenna power gain, Main Lobe	52.72	17.22 dBd
Effective Radiated Power, Maximum	1000 kW	30.0 dBk

Elevation Data

Vertical dimension of Channel 58 top-mounted antenna	13.2 meters 43.4 feet
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Overall height above ground of the proposed antenna structure including beacon and lightning rod	248.9 meters 816.6 feet
Center of radiation of Channel 58 antenna above ground	242.3 meters 795.0 feet
Elevation of site above mean sea level	397.8 meters 1305.1 feet
Center of radiation of Channel 58 antenna above mean sea level	640.1 meters 2100.1 feet
Overall height above mean sea level of proposed tower including beacon and lightning rod	646.7 meters 2121.7 feet
Antenna height above average terrain	309.6 meters 1015.8 feet

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

#### Allocation

An allocation study from the proposed site has been performed as the proposed DTV facilities are to be located at the coordinates authorized for the WJET-DT facilities in the Sixth Report.

#### 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, it is found that the depression angle,  $A_h$ , varies from 0.40 to 0.57 degrees. Since the relative vertical field is greater than 90% of the

maximum at these depression angles, the maximum power was used in determining the distance to the DTV contour.

Table I includes the distances to the city F(50,90) coverage contour, the average elevation 3.2 to 16.1 km, and the antenna height above average terrain at ten degree intervals starting with N 0° E, T.

### Interference Analysis

A study of predicted interference caused by the proposed WJET-DT service has been performed using a version of the Longley-Rice program as described in OET Bulletin No. 69 (July 2, 1997) and the Public Notice, “Additional Application Processing Guidelines for Digital Television (DTV)” (August 1998). The FCC’s FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Windows98/Intel platform. Comparison of service/interference areas and populations indicates that this model closely matches the FCC’s evaluation program. Best efforts have been made to use data and calculations identical to the FCC’s program. Any slight differences are attributable to compiler, operating system and/or processor characteristics. The effect of any variance in calculated population values versus the FCC’s program is minimized when differencing a given model’s results, such as calculating new interference as total interference less baseline interference. Any variance effect is further reduced when using ratios of calculated population values such as measuring the incremental population affected as a percent of the total population served. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 4 km<sup>2</sup> using 3-second terrain data sampled approximately every 1.0 km at one degree azimuth intervals with 1990 census centroids.

The stations to be considered for potential interference, according to the processing guidelines cited above are listed in Table II. All of the potentially affected stations are predicted to receive less than de-minimus levels of new interference. Also, none of these stations are covered by more restrictive interference standards due to more than 10% total interference or less than 90% replication.

The proposed facilities will exceed the assigned power. However, action was taken to prevent any further interference than presently allowed within the overlap of the WJET-DT allotment and Channel 58 in Guelph, Ontario. 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, FM Stations WFGO(FM), 94.7 MHz and WQHZ(FM), 102.3 MHz broadcast within 100 meters of the existing tower at the proposed WJET-DT site. DTV Station WFXP-DT, Channel 22, Erie, PA currently broadcasts with Special Temporary Authority from an adjacent tower also within 100 meters of the proposed WJET-DT site. No other FM or full-service TV stations are located within 100 meters.



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 radio frequency 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 58	DTV
WJET-TV	Channel 24	NTSC
WFGO(FM)	Channel 234A	FM
WQHZ(FM)	Channel 272A	FM
WFXP-DT	Channel 22	DTV

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

$ERP_V$  = peak visual ERP in watts

$ERP_A$  = 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 (Channel 58)	1000	0	1,000,000
WJET-TV (Channel 24)	1120	0	1,120,000
WFGO(FM) (Channel 234A)	1.7	1.7	3,400
WQHZ(FM) (Channel 272A)	1.7	1.7	3,400
WFXP-DT (STA) (Channel 22)	1.76	0	1.760

### Relative Field

The relative field factor will be determined based upon the elevation pattern for each broadcast antenna considered in this study. The antenna types currently being used by each station are listed below. The elevation pattern for each antenna is included in this report. The exhibit number for each elevation pattern is listed below. A conservative value for the relative field will be used based on a depression angle of no more than  $10^\circ$  toward the ground.

RFF Field

The RFF will be calculated two meters above the ground at the base of the WQLN-DT 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 and TV stations besides WJET-DT are assumed to have a relative field value of 0.2. WJET-DT has a known relative field value of less than 0.1 for greater than 10 degrees below the horizontal (see Exhibit E-2d). factors listed above. 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 (Channel 58)	1,000,000	240.3	0.1	5.78	491	1.2
WJET-TV (Channel 24)	1,120,000	237.2	0.2	26.6	355	7.5
WFGO(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%
WFXP-DT (STA) (Channel 22)	1760	203	0.2	0.06	347	0.02%

## Total RFF at WJET-DT Tower Site

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

The total RFF contribution of all stations two meters above the ground at the base of the WJET-DT tower is no more than 9.32% of the limit for an uncontrolled environment.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radiation 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 since the permittee indicates:

- (a)(1) The proposed facilities located on an existing tower will not be located in an officially designated wilderness area.
- (a)(2) The proposed facilities located on an existing tower will not be located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities located on an existing tower will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities located on an existing tower 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 an existing tower will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities will not be located near any known Indian religious sites.
- (a)(6) The proposed facilities will not be located in a flood plain.

- (a)(7) The installation of the DTV facilities on the existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) The painting and lighting of tower remain unchanged.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

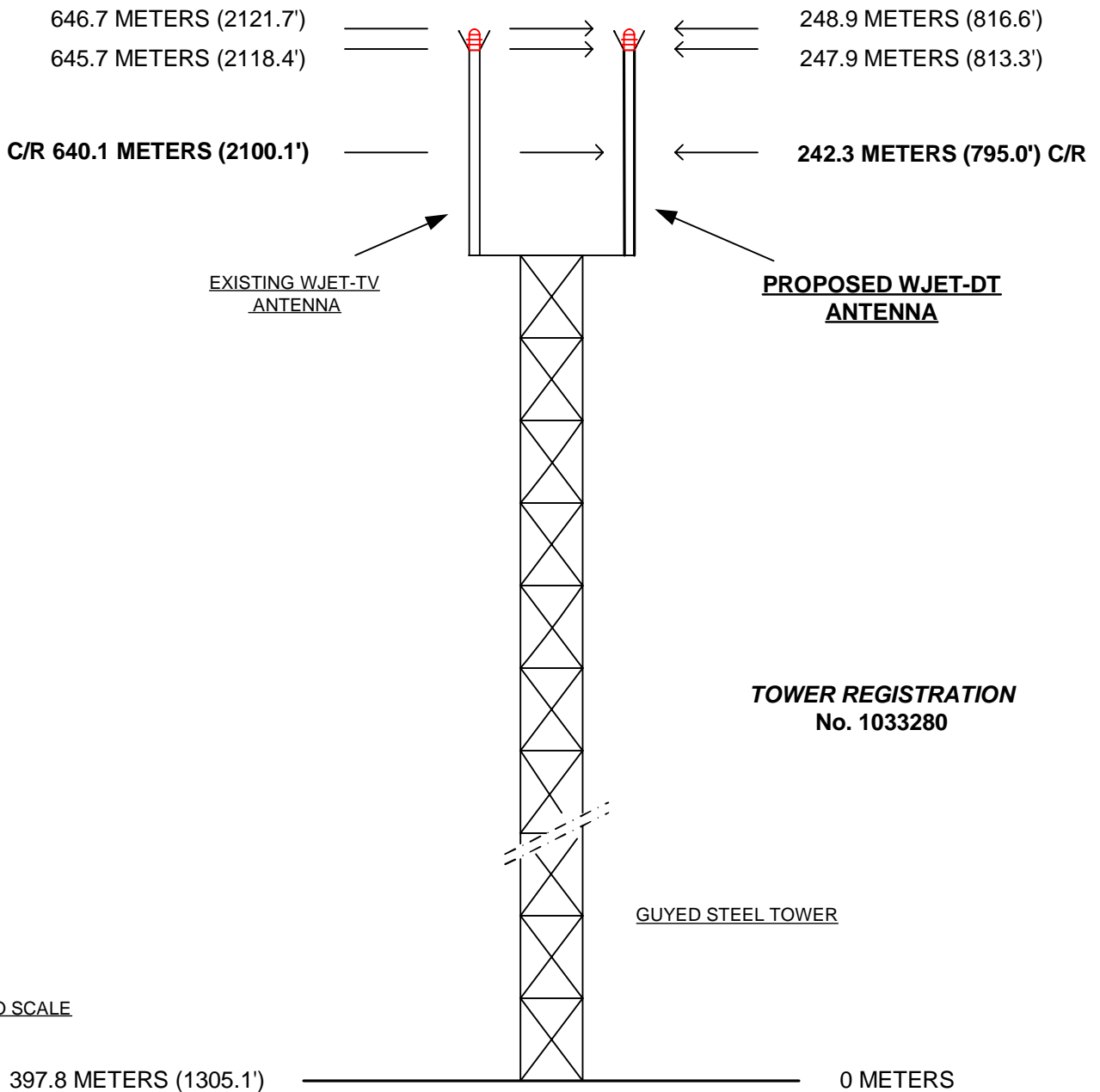


EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE PROPOSED DTV OPERATION OF  
**WJET-DT, ERIE, PENNSYLVANIA**  
JULY 2004

EXHIBIT E-2

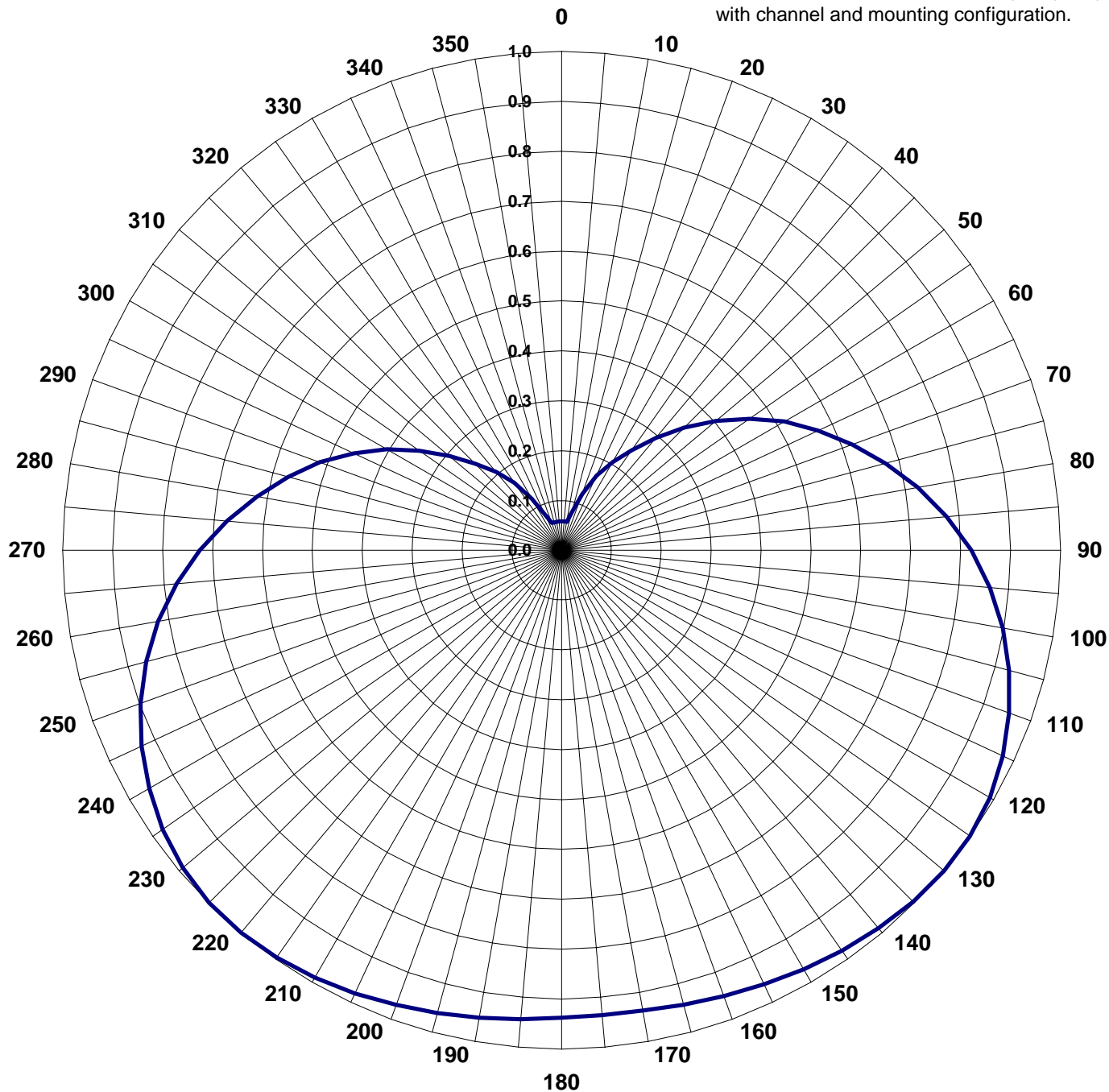
ANTENNA MANUFACTURER DATA

WJET-DT, ERIE, PENNSYLVANIA

## AZIMUTH PATTERN

<b>TYPE:</b>	<b>CH58HAZ-CX04</b>	
	<b>Numeric</b>	<b>dB</b>
<b>Directivity:</b>	<b>1.88</b>	<b>2.75</b>
<b>Peak(s) at:</b>		
<b>Polarization:</b>	<b>Horizontal</b>	
<b>Frequency:</b>	<b>58 (Digital)</b>	
<b>Location:</b>	<b>Erie, Pa</b>	

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





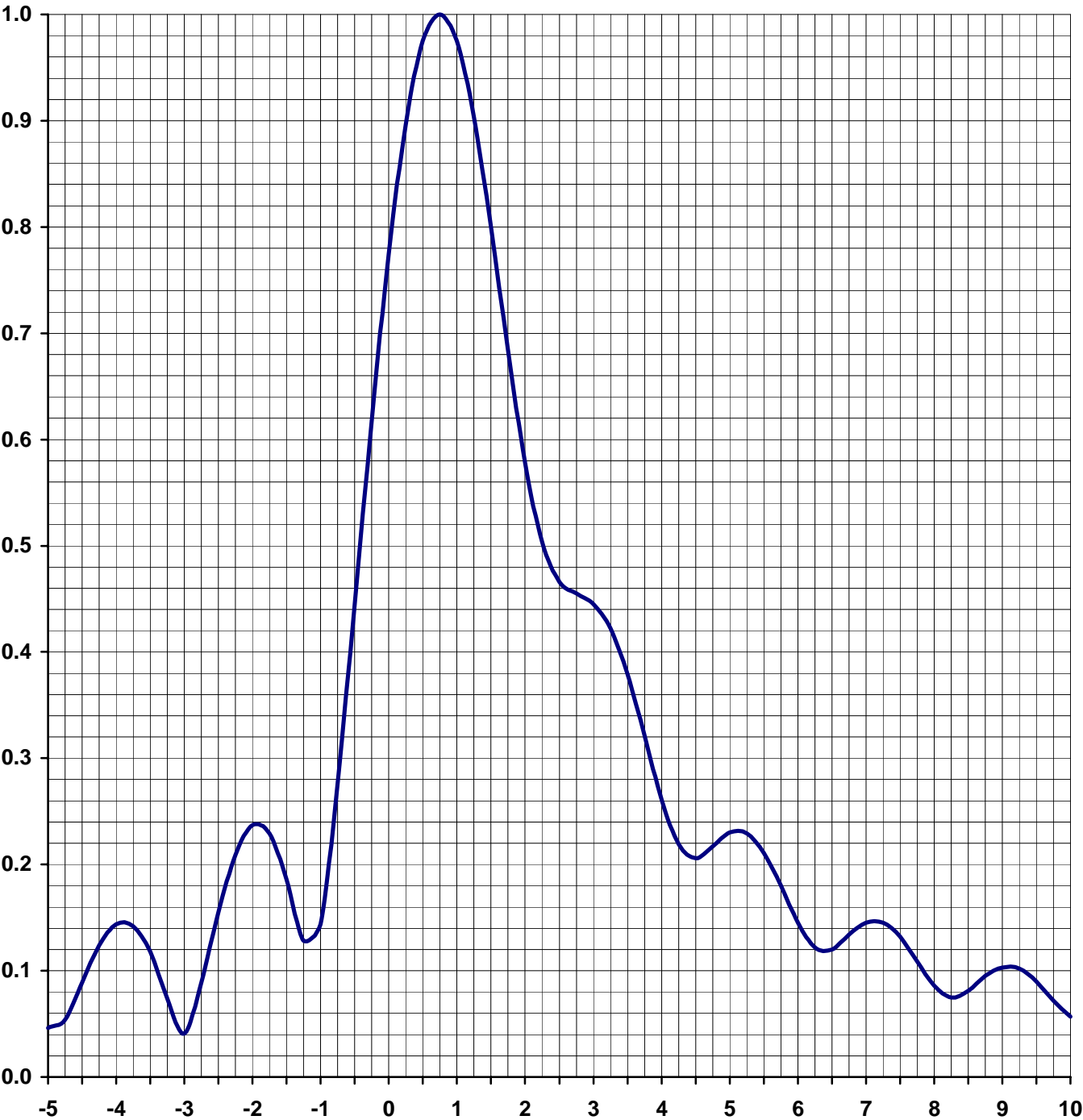
**TABULATED DATA FOR AZIMUTH PATTERN**

TYPE: CH58HAZ-CX04

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			

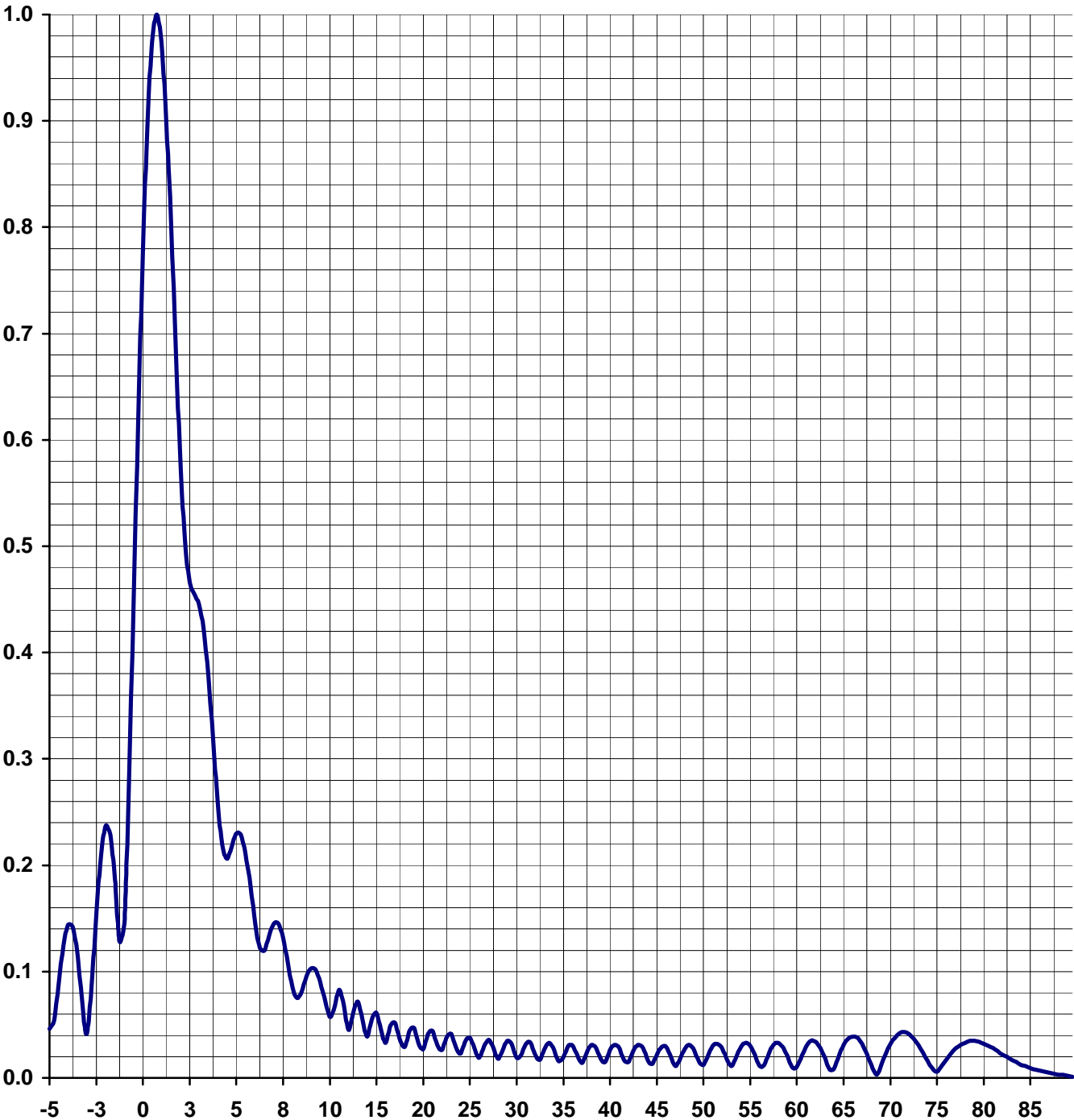
**ELEVATION PATTERN**

TYPE:	ATW28H3H	
Directivity:	Numeric	dBd
Main Lobe:	28.00	14.47
Horizontal:	16.77	12.25
Beam Tilt:	0.75	
Polarization:	Horizontal	
Frequency:	58 (Digital)	
Location:	Erie, PA	



**ELEVATION PATTERN**

TYPE:	ATW28H3H	
Directivity:	Numeric	dBd
Main Lobe:	28.00	14.47
Horizontal:	16.77	12.25
Beam Tilt:	0.75	
Polarization:	Horizontal	
Frequency:	58 (Digital)	
Location:	Erie, PA	



## TABULATED DATA FOR ELEVATION PATTERN

TYPE: **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
-5.00	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
-4.75	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
-4.50	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
-4.25	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
-4.00	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
-3.75	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
-3.50	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
-3.25	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
-3.00	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
-2.75	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
-2.50	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
-2.25	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
-2.00	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
-1.75	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
-1.50	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
-1.25	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
-1.00	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
-0.75	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
-0.50	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
-0.25	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
0.00	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
0.25	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
0.50	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
0.75	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
1.00	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
1.25	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
1.50	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
1.75	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
2.00	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
2.25	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
2.50	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
2.75	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
3.00	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	#NUM!
3.25	0.422	-7.49	20.00	0.027	-31.37	43.50	0.028	-31.06	67.00	0.032	-29.90			
3.50	0.379	-8.43	20.50	0.041	-27.74	44.00	0.017	-35.39	67.50	0.023	-32.77			
3.75	0.321	-9.87	21.00	0.044	-27.13	44.50	0.013	-37.72	68.00	0.012	-38.42			
4.00	0.261	-11.67	21.50	0.031	-30.17	45.00	0.022	-33.15	68.50	0.003	-50.46			
4.25	0.219	-13.19	22.00	0.026	-31.70	45.50	0.029	-30.75	69.00	0.012	-38.42			
4.50	0.206	-13.72	22.50	0.038	-28.40	46.00	0.029	-30.75	69.50	0.023	-32.77			
4.75	0.217	-13.27	23.00	0.041	-27.74	46.50	0.020	-33.98	70.00	0.032	-29.90			
5.00	0.230	-12.77	23.50	0.029	-30.75	47.00	0.011	-39.17	70.50	0.038	-28.40			
5.25	0.229	-12.80	24.00	0.023	-32.77	47.50	0.018	-34.89	71.00	0.042	-27.54			
5.50	0.211	-13.51	24.50	0.034	-29.37	48.00	0.027	-31.37	71.50	0.043	-27.33			
5.75	0.180	-14.89	25.00	0.038	-28.40	48.50	0.031	-30.17	72.00	0.041	-27.74			
6.00	0.145	-16.77	25.50	0.028	-31.06	49.00	0.026	-31.70	72.50	0.037	-28.64			
6.25	0.122	-18.27	26.00	0.019	-34.42	49.50	0.016	-35.92	73.00	0.031	-30.17			
6.50	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  
FOR PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 58 1000 KW ERP 309.6 METERS HAAT  
JULY 2004

<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</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>41 dBu</u> km
0	216.4	423.7	0.570	3.4	56.9	66.4
10	230.3	409.8	0.561	3.4	56.4	65.6
20	247.6	392.5	0.549	14.4	63.8	73.8
30	282.7	357.4	0.524	42.0	67.9	78.3
40	324.5	315.6	0.492	85.8	69.3	78.9
50	370.1	270.0	0.455	163.2	69.4	78.1
60	401.5	238.6	0.428	265.2	69.7	78.1
70	410.2	229.9	0.420	384.4	70.9	79.7
80	407.5	232.6	0.423	525.6	72.6	82.2
90	411.1	229.0	0.419	674.0	73.6	83.8
100	416.6	223.5	0.414	806.4	74.1	84.6
110	412.5	227.6	0.418	912.0	75.1	86.2
120	407.2	232.9	0.423	982.1	75.9	87.5
130	403.4	236.7	0.426	1000.0	76.3	88.2
140	393.5	246.6	0.435	978.1	77.0	89.3
150	411.2	228.9	0.419	940.9	75.4	86.6
160	403.7	236.4	0.426	904.4	75.7	87.2
170	426.8	213.3	0.405	878.0	73.9	84.2
180	424.8	215.3	0.408	878.0	74.0	84.5
190	424.5	215.6	0.407	904.4	74.2	84.7
200	403.0	237.1	0.426	940.9	76.0	87.7
210	392.3	247.8	0.436	978.1	77.1	89.5
220	371.9	268.2	0.454	1000.0	79.2	92.6
230	346.6	293.5	0.475	982.1	82.1	95.9
240	309.9	330.2	0.503	912.0	85.8	99.2
250	305.1	335.0	0.507	806.4	85.4	98.6
260	296.0	344.1	0.514	674.0	85.0	97.9
270	267.4	372.7	0.534	525.6	85.8	98.1
280	245.7	394.4	0.550	384.4	85.1	96.9

TABLE I  
COMPUTED COVERAGE DATA  
FOR PROPOSED DTV OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 58 1000 KW ERP 309.6 METERS HAAT  
JULY 2004  
 (continued)

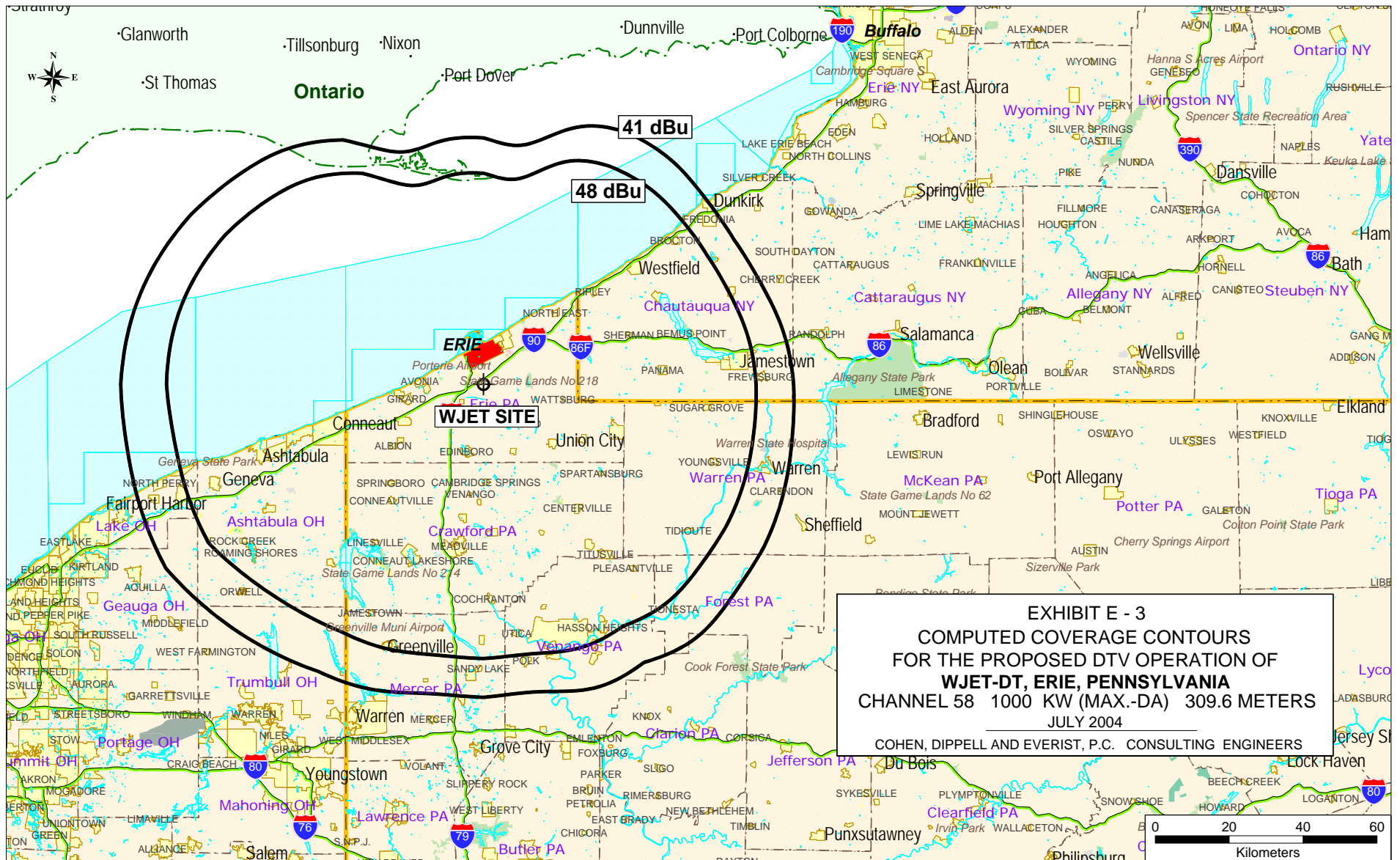
<u>Radial</u> N ° E, T	<u>Average</u> <u>Elevation</u>	<u>Effective</u> <u>Height</u>	<u>Depression</u> <u>Angle</u>	<u>ERP</u> kW	<u>Distance to Contour</u>	
	meters	meters	degrees		<u>48 dBu</u> km	<u>41 dBu</u> km
290	233.9	406.2	0.558	265.2	83.3	94.6
300	225.6	414.5	0.564	163.2	80.6	91.4
310	219.6	420.5	0.568	85.8	76.8	87.2
320	214.4	425.7	0.571	42.0	72.4	82.8
330	212.4	427.7	0.573	14.4	65.7	76.1
340	212.5	427.6	0.573	3.4	57.0	66.7
350	213.4	426.7	0.572	3.4	57.0	66.6
Average	330.5	309.6				

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

DTV Channel 58 (734-740 MHz)  
 Average Elevation 3.2 to 16.1 km 330.5 meters AMSL  
 Center of Radiation 640.1 meters AMSL  
 Antenna Height Above Average Terrain 309.6 meters  
 Effective Radiated Power 1000 kW (30 dBk) Maximum

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

(NAD-27)



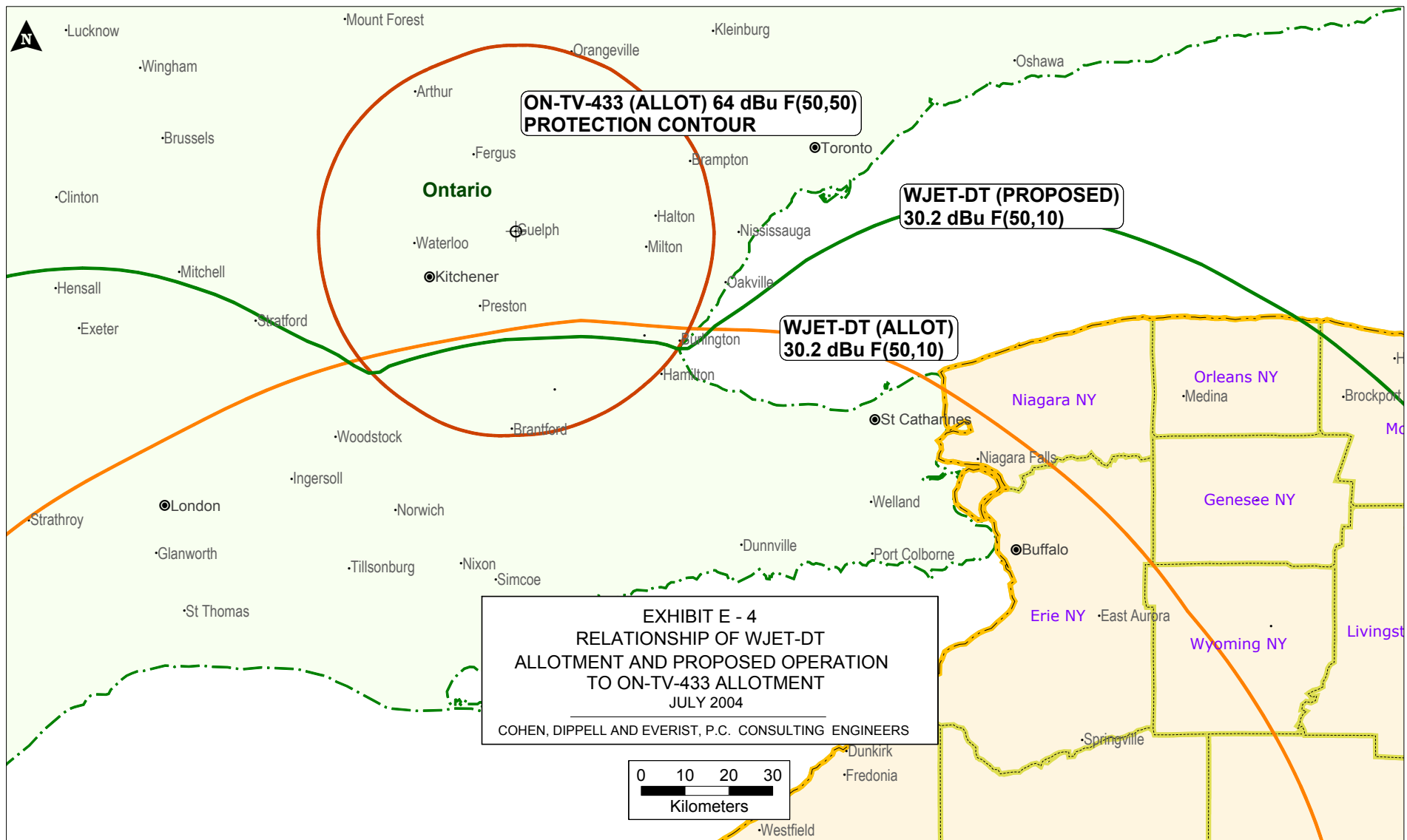




TABLE II  
LONGLEY-RICE ANALYSIS FOR THE  
PROPOSED OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 58 1000 KW ERP 309.6 METERS HAAT  
JULY 2004

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Distance</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>Result</u>
44	WDTB-LP	HAMBURG NY	135.2	APP	BPTTL -20030529AFK	No Interference
44	W53BN	YOUNGSTOWN OH	119.4	APP	BPTTL -20020327ABI	No Interference
44	W60BL	BUTLER PA	127.9	CP	BPTTL -20030407AAC	No Interference
44	WKHU-CA	KITTANNING PA	127.9	APP	BMPTTL -20011218AAX	No Interference
44	W52BO	MEADVILLE PA	46.6	APP	BPTT -20010223AAZ	No Interference
51	W51BI	KIRTLAND OH	120.1	LIC	BLTT -19941013JD	No Interference
51	NEW	ERIE PA	10.7	APP	BNPTTL -20000830BNF	0.0%
54	WQLN	ERIE PA	0.3	LIC	BLET -19790827KG	No Interference
54	WQLN	ERIE PA	0.4	APP	BPET -20040129APL	No Interference
56	WBXZ-LP	BUFFALO NY	135.2	LIC	BLTTL -20000424AAY	No Interference
56	W56AD	KENNEDY NY	82.6	LIC	BLTT -1688	No Interference
56	NEW	ERIE PA	10.7	APP	BNPTTL -20000830BPO	No Interference
56	W56CL	NEW CASTLE PA	118.3	LIC	BLTTL -19960903JA	No Interference
57	WXOX-LP	CLEVELAND OH	153.4	CP MOD	BMPTTL #NAME?	No Interference
57	W57BH	STEUBENVILLE OH	191.1	LIC	BLTTL -19981230JA	No Interference
57	WTOV-TV	STEUBENVILLE OH	194.3	CP MOD	BMPCDT -20020408AAK	No Interference
57	WTOV-DT	STEUBENVILLE OH	193.4	PLN	DTVPLN #NAME?	No Interference
57	W57AH	BROCKPORT PA	147.6	LIC	BLTT -19950717IC	No Interference
57	W57BH	WEIRTON WV	191.1	APP	BPTTL -20020911ABE	No Interference
58	960920WC	ANN ARBOR MI	294.1	APP	BPET -19960920WC	No Interference
58	WJBK	DETROIT MI	262.9	LIC	BLCDT -19981105KG	No Interference
58	WJBK-DT	DETROIT MI	262.9	PLN	DTVPLN #NAME?	0.0%
58	WKJF-LP	PINCONNING MI	368.7	LIC	BLTTL -20021021AAA	No Interference
58	WFHW-LP	BUFFALO NY	135.2	LIC	BLTTL -19890505IC	No Interference
58	WHEC-TV	ROCHESTER NY	237	CP	BPCDT -19991027ACQ	No Interference
58	WHEC-DT	ROCHESTER NY	237	PLN	DTVPLN #NAME?	0.4%
58	WJOS-LP	POMEROY OH	372.5	LIC	BLTTL -20030506ABJ	No Interference
58	WGAL	LANCASTER PA	365.2	LIC	BLCDT -20010621ABF	No Interference
58	WGAL-DT	LANCASTER PA	365.2	PLN	DTVPLN #NAME?	0.0%

TABLE II  
LONGLEY-RICE ANALYSIS FOR THE  
PROPOSED OPERATION OF  
WJET-DT, ERIE, PENNSYLVANIA  
CHANNEL 58 1000 KW ERP 309.6 METERS HAAT  
JULY 2004

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Distance</u>	<u>Status</u>	<u>Application</u>	<u>Ref. No.</u>	<u>Result</u>
59	WVPX	AKRON OH	166.2	APP	BPCDT	-19990128KN	0.0%
59	WAKC-DT	AKRON OH	166.2	PLN	DTVPLN	#NAME?	0.0%
59	WBGN-LP	PITTSBURGH PA	177.4	LIC	BLTTL	-19970528JC	No Interference
60	W60AC	FINDLEY LAKE NY	28.1	LIC	BLTT	-1667	No Interference
60	W60BL	BUTLER PA	127.9	LIC	BLTTL	-19990322JC	No Interference
62	960111KN	ARCADE NY	132.9	APP	BPCT	-19960111KN	No Interference
62	960405L4	ARCADE NY	136.2	APP	BPCT	-19960405L4	No Interference
62	960405L7	ARCADE NY	136.6	APP	BPCT	-19960405L7	No Interference
62	960405XN	ARCADE NY	132.9	APP	BPCT	-19960405XN	No Interference
62	W62AD	CLYMER NY	35.5	LIC	BLTT	-1668	No Interference
62	W62AG	SINCLAIRVILLE NY	66.5	LIC	BLTT	-1671	No Interference
62	WYFX-LP	YOUNGSTOWN OH	119.4	LIC	BLTTL	-20011010AAJ	No Interference
62	NEW	ERIE PA	10.7	APP	BNPTTL	-20000830BMV	No Interference
66	WFXP	ERIE PA	0.3	LIC	BLCT	-19950224KF	No Interference

## 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

# TECHBOX

- 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.**

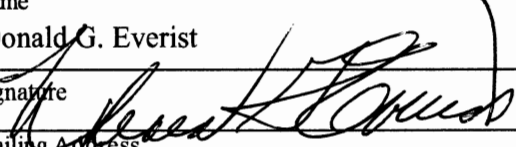
I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular 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 Donald G. Everist	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 	Date July 30, 2004	
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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