

ENGINEERING STATEMENT  
APPLICATION FOR  
DTV CONSTRUCTION PERMIT  
REPLACEMENT TELEVISION TRANSLATOR SERVICE  
PER MB DOCKET NO. 08-253  
MAINE PUBLIC BROADCASTING CORP.  
CHANNEL 25 15 KW MAX ERP 387.8 METERS RC/AMSL  
EAST EDDINGTON, MAINE  
DECEMBER 2009

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 )

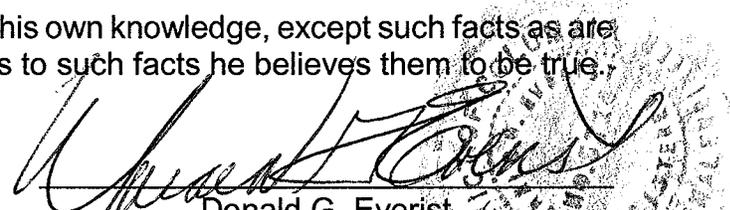
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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;

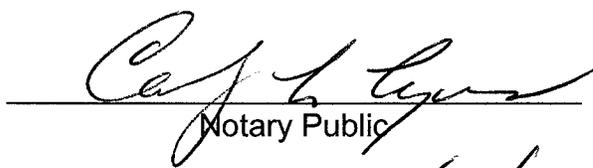
That his qualifications are a matter of record in the Federal Communications Commission;

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

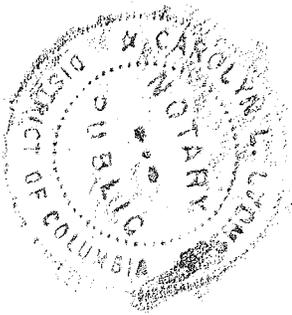
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

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

Subscribed and sworn to before me this 17<sup>th</sup> day of December 2009.

  
Notary Public

My Commission Expires: 2/28/2013



Introduction

This engineering statement has been prepared on behalf of Maine Public Broadcasting Corp. (“MPBC”), licensee of WMEB-DT, Orono, Maine, operating on Channel 9 with 15 kW directional effective radiated power (“ERP”) and a height above average terrain (“HAAT”) of 375 meters. This statement supports a request for replacement translator DTV service operation to serve an area north and east of Bangor that is terrain shielded blocked. The facilities proposed are for Channel 25 with a DTV directional ERP of 15 kW at a radiation center above mean sea level (“RCAMSL”) of 387.8 meters.

Transmitter Site

No significant alteration of the existing tower is proposed. The existing tower is located on Black Cap Mountain off Route 46. The geographic coordinates of the site follow below.

North Latitude: 44° 45' 45"

West Longitude: 68° 33' 58"

Antenna Registration No. 1035355

NAD-27

Elevation Data

Elevation of site above mean sea level	286.5 meters (940 feet)
Center of radiation of antenna above ground level	101.3 meters (332.3 feet)
Center of radiation of antenna above mean sea level	387.8 meters (1272.4 feet)
Overall height of the tower above	398.8 meters

mean sea level including (1308.4 feet)  
appurtenances

A tower sketch has been included as Exhibit E-1.

Equipment Data

Transmitter: Type-approved

Transmission Line: Andrew, Type HJ8-50B, 3", 100 meters (328 feet)  
with 75% efficiency [0.38 dB loss/100 ft]

Antenna: Dielectric, Type TLP16M (C) with maximum gain  
of 25.6 and 1° electrical beam tilt. Exhibit E-2  
provides antenna pattern information

Emission Mask: Simple

Power Data

Transmitter: Harris Diamond Series	0.781 kW	-1.072 dBk
Transmission Line Loss:	75%	1.25 dB
Input Into Antenna:	0.586 kW	-2.322 dBk
Antenna Gain:	25.60	14.08 dB
ERP:	15 kW	11.76 dBk

As indicated above, the transmitter with typical power output of 0.781 kW will deliver 0.586 kW to the input of the antenna. The antenna, having a maximum gain of 25.6 and an electrical beam tilt of 1°, will produce maximum ERP of 15 kW. A coverage map of the proposed facility has been included as Exhibit E-3 of this report. This replacement service is to

fill-in the lack of DTV service determined by the MPBC technical staff from the directional WMEB digital operation.

#### Other Broadcast Facilities

A brief analysis was completed to determine the presence of stations in the vicinity of the existing tower using the data contained within the Commission's Consolidated Database System ("CDBS"). Within 100 meters of the proposed site, one authorized FM radio station, WMEH(FM), was identified and one authorized television translator station was also found. There are no AM facilities within 3.2 km of the existing tower. Although no adverse technical affects are expected due to the proposed changes, the licensee will take measures to resolve any problems proven to be related to the changes proposed in this application.

#### Interference Analysis

A study of predicted interference caused by the proposed replacement service low-power digital operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at [http://www.fcc.gov/oet/dtv/dtv\\_apps.html](http://www.fcc.gov/oet/dtv/dtv_apps.html). The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Microsoft Windows XP platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2000

census centroids, all studies are based upon data in the current CDBS database update of the FCC's engineering database. A Longley-Rice study was performed with the proposed replacement service low power digital facilities and all relevant stations listed in the FCC data base as of November 13, 2009. The study results and the included stations are listed in Table I.

#### Other Licensed and Broadcast Facilities

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

#### FCC Rule, Section 1.1307

The proposed 15 kW non-directional operation will utilize a Dielectric, Type TLP16M (C) antenna (or equivalent) described above with a center of radiation above ground of 101.3 meters. The proposed antenna is top-mounted on an existing steel lattice tower with an overall height of 112.3 meters above ground.

As previously indicated, there are no AM stations located within 3.2 km of the proposed tower site. Since there will be no change in height, the electrical characteristic at the AM frequencies will be unchanged. According to the FCC database, there is one FM and one television translator station located<sup>1</sup> within 100 meters of the existing tower. Access to the tower property is prevented by a security fence with a locked gate.

The proposed operation based upon the current OET Bulletin No. 65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radiofrequency field ("RFF")

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<sup>1</sup>This translator no longer exists at this site.

guidelines, and thus, complies with Section 1.1307 of the FCC Rules. The elevation pattern for the Dielectric, Type TLP16M (C) antenna, Exhibit E-2, shows a maximum relative field of less than 0.2 toward the ground (30° to 90° below the horizontal). Calculation according to OET Bulletin 65 predicts a maximum RFF power density of less than 2  $\mu\text{W}/\text{cm}^2$ , 2 meters above ground or less than 0.6% of the controlled Maximum Permissible Exposure (“MPE”) guideline.

For completeness, the contribution by facilities located within 100 meters to the electromagnetic field environment is considered herein, as there are multiple emitters in the area. The RFF study will also consider the following stations:

The RFF contribution of each station will be calculated using the following basic formula:

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

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

ERP =  $[0.4 \text{ ERP}_V + \text{ERP}_A]$  for NTSC Stations

$\text{ERP}_V$  = peak visual ERP in watts

$\text{ERP}_A$  = RMS aural ERP in watts

ERP = ERP (horizontally polarized) + ERP (vertically polarized)

### WMEH(FM) Facility

Channel 215B          Freq:                      90.9 MHz

ERP = 13.5 kW  
Polarization = Horizontal + Vertical  
RCAGL -2 meters = 53 meters

$$S = \frac{33.4 (F^2) \text{Tot ERP}}{R^2} \text{Tot ERP} = 27,000 \text{ watts}$$

R = 53 meters  
F = 0.4 (assumed value)

$$S = < 51.4 \mu\text{W}/\text{cm}^2$$

Therefore, WMEH(FM) contributes less than 51.4  $\mu\text{W}/\text{cm}^2$  at 2 meters above the ground.

The limit for a controlled environment is 200  $\mu\text{W}/\text{cm}^2$  for the FM band range.

WMEH(FM) contributes less than 25.7% RFF level for a controlled environment two meters above the ground.

Total RFF contribution

0.6% (proposed) + 25.7% (FM) = 26.3% for the controlled environment two meters above ground including the proposed DTV translator operation.

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 or near 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 GROUND

ABOVE MEAN SEA LEVEL

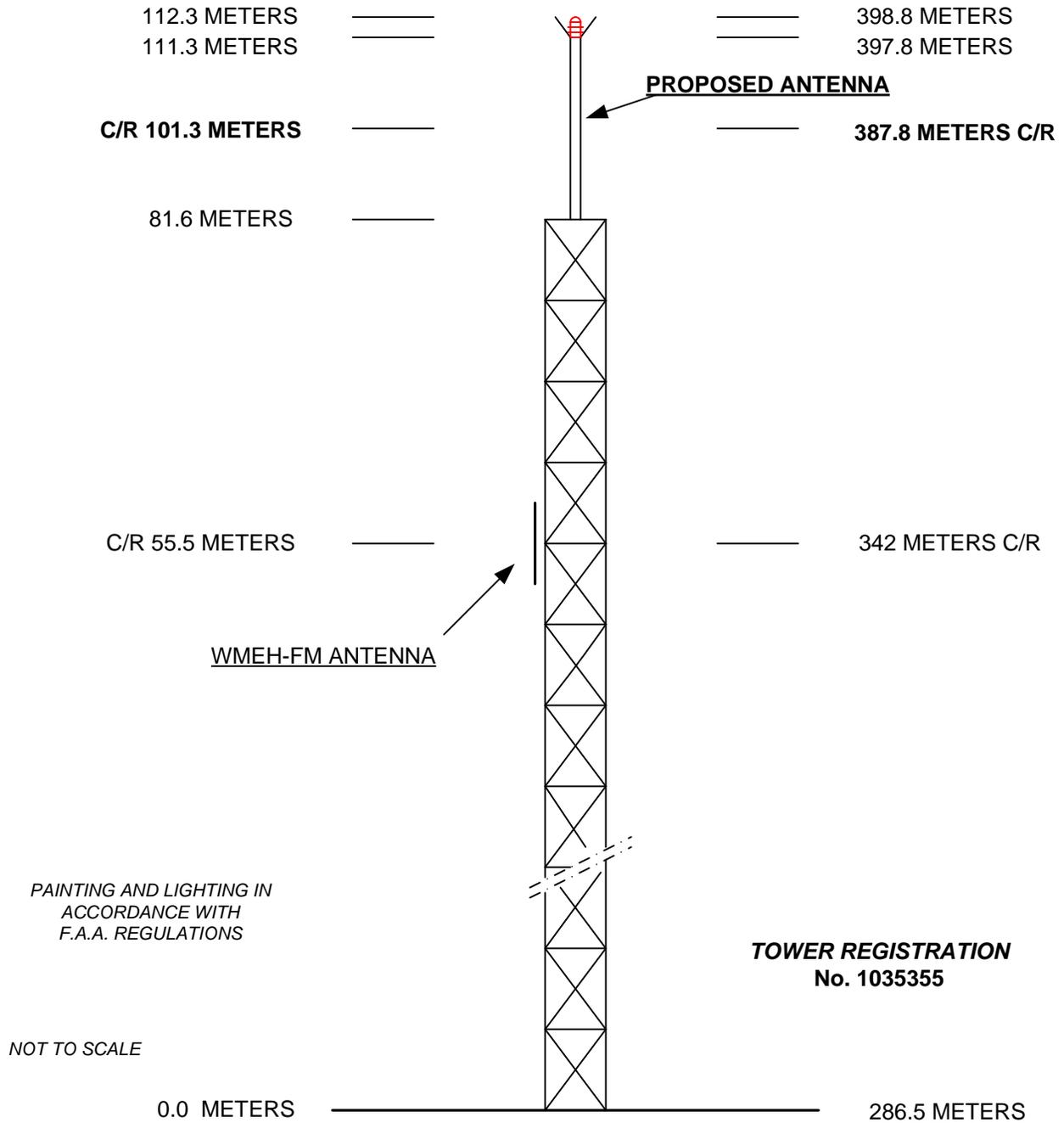


EXHIBIT E - 1  
TOWER SKETCH  
FOR PROPOSED REPLACEMENT SERVICE  
MAINE PUBLIC BROADCASTING CORPORATION  
DECEMBER 2009

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I  
LONGLEY-RICE INTERFERENCE  
OPERATION OF  
NEW, EAST EDDINGTON, MAINE  
REPLACEMENT TRANSLATOR SERVICE  
FOR WMEB-TV, ORONO, MAINE  
CHANNEL 25 15 KW ND ERP 387.8 METERS HAAT  
DECEMBER 2009

SITE COORDINATES

N 44° 45' 45" E

W 68° 33' 58" E

SIMPLE MASK

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
21	WGBI-LP	FARMINGTON ME	129.4	LIC	BLTT-19980428JE	0.00%
22	WFVX-LP	BANGOR ME	0	LIC	BLTTL-20031107AEC	No interference
22		MCADAM NB	135	APP	NULL-303701NULL	0.00%
24	CKLT-DT-	FLORENCEVILLE NB	200.2	AL	CANADA-C1345471	No interference
24	CKLT-PT-	FLORENCEVILLE NB	200.2	AL	CANADA-1347389NULL	No interference
24	CKLT-TV-	FLORENCEVILLE NB	200.2	APP	BPFS-20041012AHA	No interference
24	CKLT-TV-	FLORENCEVILLE NB	200.2	LIC	BPFS-20081125AMO	No interference
25	WFXZ-CA	BOSTON MA	346.8	APP	BDISDTA-20090902ABE	No interference
25	NB-DT-12	MONCTON NB	330.4	AL	CANADA-C1345250	No interference
25	NB-PT-92	MONCTON NB	330.4	AL	CANADA-1347409NULL	No interference
25	NEW-DT	MONCTON NB	330.3	APP	BPFS-20041012AHN	No interference
25	VACANT	MONCTON NB	330.3	LIC	BPFS-20081125ARX	No interference
25	CBHT-1	LIVERPOOL NS	315.2	APP	BPFS-20041014ABW	No interference
25	CBHT-DT-	LIVERPOOL NS	315.3	AL	CANADA-C1344982	No interference
25	NS-PT-12	LIVERPOOL NS	315.3	AL	CANADA-1346127NULL	No interference
25	VACANT	LIVERPOOL NS	315.2	LIC	BPFS-20081126AHN	No interference
25	QU-DT-14	GRANBY QC	333.3	AL	CANADA-C1344691	No interference
25	CBVE-TV	QUEBEC QC	307	LIC	BPFS-20081211ADW	0.06%
25	CBVE-PT	QUEBEC QC	307	AL	CANADA-1346190NULL	No interference
25	CIVQ-DT	QUEBEC QC	306.4	AL	CANADA-C1344782	No interference
25	CIVQ-DT	QUEBEC QC	306.4	AU	CANADA-5618	No interference
25	QU-DT-19	RIVIERE-DU-LOUP QC	349.3	AL	CANADA-C1344652	No interference
25	NEW-DT	GRANBY QC	333.3	APP	BPFS-20041026AEN	No interference

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N 44° 45' 45" E

W 68° 33' 58" E

SIMPLE MASK

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
25	CIVQ-TV	QUEBEC QC	306.4	APP	BPFS-20041027ADU	No interference
25	NEW-DT	RIVIERE-DU-LOUP QC	349.3	APP	BPFS-20041028AAQ	No interference
25	WNNE	HARTFORD VT	343.3	LIC	BLCDT-20050801BFZ	No interference
25	W25BT	MONKTON VT	366.3	CP	BDFCDTT-20060331AFO	0.00%
25	W25BT	MONKTON VT	366.3	LIC	BLTT-19930827JP	0.00%
26	WMTW	PORTLAND ME	182.5	CP	BDRTCDT-20090814ABB	No interference
26	NB-PT-94	ST. ANDREWS NB	124.6	AL	CANADA-1347550NULL	No interference
26	VACANT	ST. ANDREWS NB	124.5	LIC	BPFS-20081126ABW	No interference
26	CHCT-TV	ST. ANDREWS NB	123.7	LIC	BPFS-1127563NULL	0.00%
26	CHCT-TV	ST. ANDREWS NB	123.7	LIC	BPFS-20050502ADF	0.00%
26	VACANT	LAC-MEGANTIC QC	203.2	LIC	BPFS-20081210ADI	0.00%
26	QC-PT-19	LAC-MEGANTIC QC	203.2	AL	CANADA-1346005NULL	0.00%
27	NEW	BANGOR ME	18.9	APP	BNPTTL-20000830BMF	No interference
27	NEW	BANGOR ME	20	APP	BNPTTL-20000830BJJ	0.00%
27	W27DE	BLUE HILL ME	36.5	CP	BNPTTL-20000831BLV	No interference
29	W29CA	BRUNSWICK ME	141	LIC	BLTTL-20010209AAE	0.00%
29	940415J9	LEWISTON ME	134.4	APP	BPTTL-19940415J9	0.00%
33	WBGR-LP	BANGOR-DEDHAM ME	11	LIC	BLTTL-19990707JC	No interference

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EXHIBIT E-2

ANTENNA MANUFACTURER DATA

WMEB-DT, ORONO, MAINE

FOR REPLACEMENT TRANSLATOR SERVICE

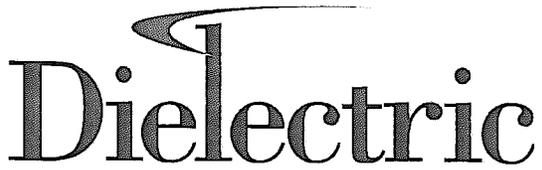


Exhibit No.  
WMEB Ch 25

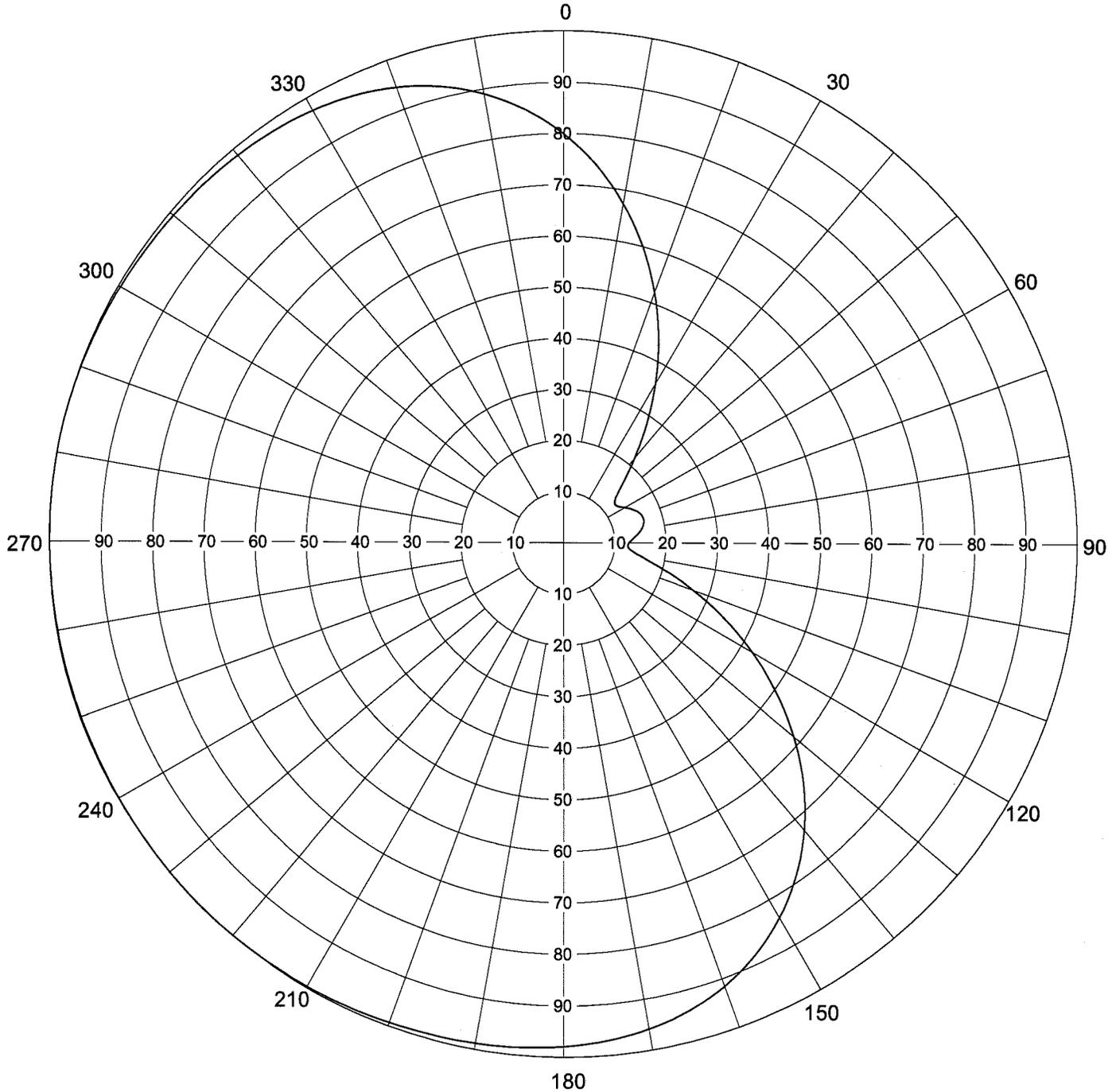
Date **11 Dec 2009**  
Call Letters **WMEB** Channel  
Location  
Customer **Maine Public Broadcasting**  
Antenna Type **TLP16M (C)**

**AZIMUTH PATTERN**

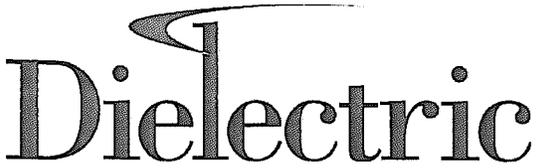
Gain  
Calculated / Measured

**1.60 (2.04 dB)**  
**Calculated**

Frequency **MHz**  
Drawing # **C160**



Remarks:



Date **11 Dec 2009**  
 Call Letters **WMEB** Channel  
 Location  
 Customer **Maine Public Broadcasting**  
 Antenna Type **TLP16M (C)**

**TABULATION OF AZIMUTH PATTERN**

Azimuth Pattern Drawing # **C160**

Angle	Field														
0	0.800	45	0.162	90	0.128	135	0.660	180	0.979	225	1.000	270	0.999	315	0.989
1	0.789	46	0.155	91	0.126	136	0.674	181	0.981	226	1.000	271	0.999	316	0.988
2	0.777	47	0.147	92	0.126	137	0.688	182	0.982	227	1.000	272	1.000	317	0.988
3	0.765	48	0.141	93	0.126	138	0.701	183	0.983	228	1.000	273	1.000	318	0.987
4	0.753	49	0.135	94	0.127	139	0.715	184	0.984	229	1.000	274	1.000	319	0.986
5	0.741	50	0.132	95	0.128	140	0.728	185	0.985	230	1.000	275	1.000	320	0.985
6	0.728	51	0.128	96	0.132	141	0.741	186	0.985	231	1.000	276	1.000	321	0.985
7	0.715	52	0.127	97	0.135	142	0.753	187	0.986	232	1.000	277	1.000	322	0.984
8	0.701	53	0.126	98	0.141	143	0.765	188	0.987	233	1.000	278	1.000	323	0.983
9	0.688	54	0.126	99	0.147	144	0.777	189	0.988	234	1.000	279	1.000	324	0.982
10	0.674	55	0.126	100	0.155	145	0.789	190	0.988	235	0.999	280	1.000	325	0.981
11	0.660	56	0.128	101	0.162	146	0.800	191	0.989	236	0.999	281	1.000	326	0.979
12	0.645	57	0.130	102	0.172	147	0.810	192	0.989	237	0.999	282	1.000	327	0.978
13	0.630	58	0.132	103	0.182	148	0.821	193	0.990	238	0.999	283	1.000	328	0.976
14	0.615	59	0.135	104	0.193	149	0.831	194	0.990	239	0.999	284	1.000	329	0.975
15	0.600	60	0.138	105	0.204	150	0.840	195	0.991	240	0.999	285	1.000	330	0.973
16	0.585	61	0.141	106	0.216	151	0.850	196	0.991	241	0.999	286	1.000	331	0.971
17	0.569	62	0.144	107	0.229	152	0.858	197	0.992	242	0.999	287	0.999	332	0.969
18	0.553	63	0.147	108	0.242	153	0.867	198	0.992	243	0.998	288	0.999	333	0.967
19	0.537	64	0.149	109	0.255	154	0.875	199	0.993	244	0.998	289	0.999	334	0.964
20	0.521	65	0.152	110	0.270	155	0.883	200	0.993	245	0.998	290	0.999	335	0.962
21	0.505	66	0.155	111	0.284	156	0.890	201	0.994	246	0.998	291	0.999	336	0.959
22	0.489	67	0.157	112	0.299	157	0.897	202	0.994	247	0.998	292	0.998	337	0.956
23	0.473	68	0.159	113	0.314	158	0.904	203	0.995	248	0.998	293	0.998	338	0.953
24	0.457	69	0.160	114	0.329	159	0.910	204	0.995	249	0.998	294	0.998	339	0.949
25	0.441	70	0.161	115	0.344	160	0.916	205	0.995	250	0.998	295	0.998	340	0.945
26	0.424	71	0.162	116	0.360	161	0.922	206	0.996	251	0.998	296	0.997	341	0.941
27	0.408	72	0.163	117	0.376	162	0.927	207	0.996	252	0.998	297	0.997	342	0.937
28	0.392	73	0.163	118	0.392	163	0.932	208	0.997	253	0.998	298	0.997	343	0.932
29	0.376	74	0.163	119	0.408	164	0.937	209	0.997	254	0.998	299	0.996	344	0.927
30	0.360	75	0.162	120	0.424	165	0.941	210	0.997	255	0.998	300	0.996	345	0.922
31	0.344	76	0.161	121	0.441	166	0.945	211	0.998	256	0.998	301	0.995	346	0.916
32	0.329	77	0.160	122	0.457	167	0.949	212	0.998	257	0.998	302	0.995	347	0.910
33	0.314	78	0.159	123	0.473	168	0.953	213	0.998	258	0.998	303	0.995	348	0.904
34	0.299	79	0.157	124	0.489	169	0.956	214	0.998	259	0.998	304	0.994	349	0.897
35	0.284	80	0.155	125	0.505	170	0.959	215	0.999	260	0.998	305	0.994	350	0.890
36	0.270	81	0.152	126	0.521	171	0.962	216	0.999	261	0.998	306	0.993	351	0.883
37	0.255	82	0.149	127	0.537	172	0.964	217	0.999	262	0.998	307	0.993	352	0.875
38	0.242	83	0.147	128	0.553	173	0.967	218	0.999	263	0.998	308	0.992	353	0.867
39	0.229	84	0.144	129	0.569	174	0.969	219	0.999	264	0.999	309	0.992	354	0.858
40	0.216	85	0.141	130	0.585	175	0.971	220	1.000	265	0.999	310	0.991	355	0.850
41	0.204	86	0.138	131	0.600	176	0.973	221	1.000	266	0.999	311	0.991	356	0.840
42	0.193	87	0.135	132	0.615	177	0.975	222	1.000	267	0.999	312	0.990	357	0.831
43	0.182	88	0.132	133	0.630	178	0.976	223	1.000	268	0.999	313	0.990	358	0.821
44	0.172	89	0.130	134	0.645	179	0.978	224	1.000	269	0.999	314	0.989	359	0.810

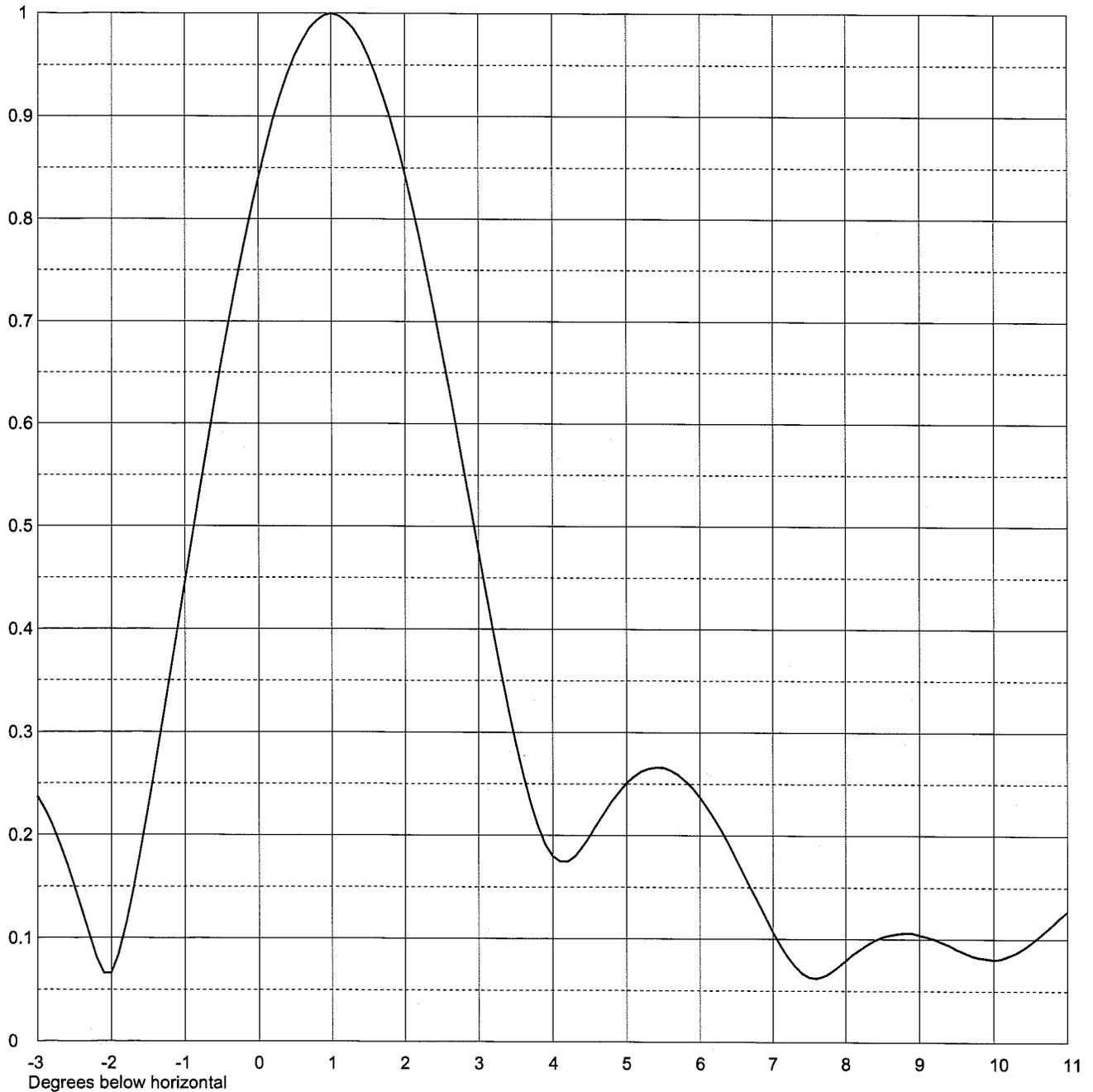
Remarks:



Date **11 Dec 2009**  
Call Letters **WMEB** Channel **25**  
Location  
Customer **Maine Public Broadcasting**  
Antenna Type **TLP-16M (C)**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>16.0 (12.04 dB)</b>	Beam Tilt	<b>1.00 Degrees</b>
RMS Gain at Horizontal	<b>11.3 (10.53 dB)</b>	Frequency	<b>539.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>16L160100</b>



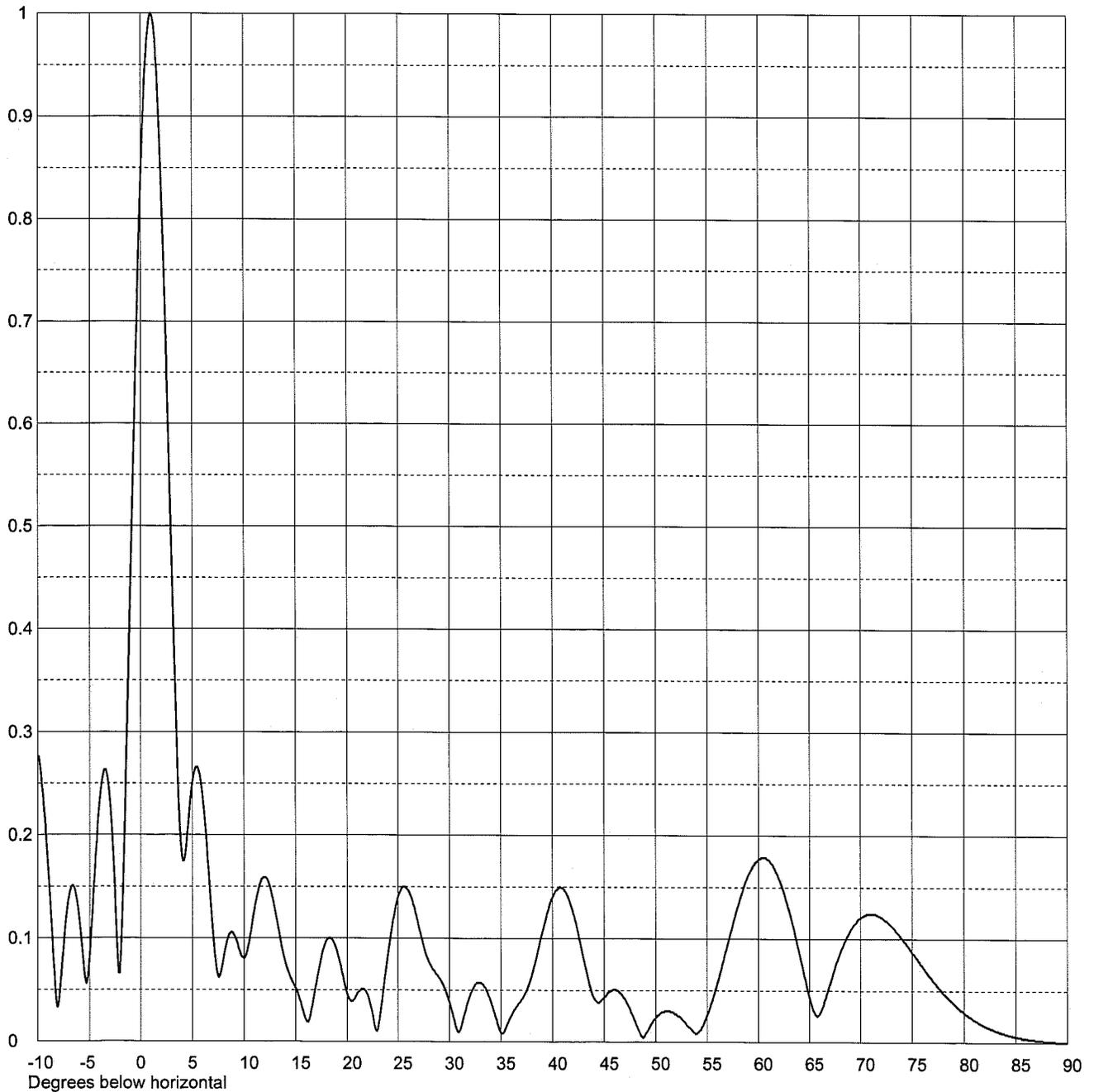
Remarks:



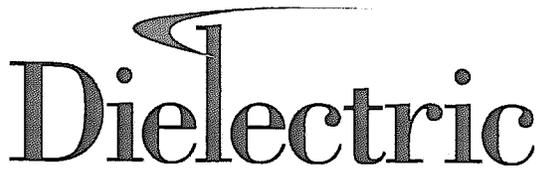
Date **11 Dec 2009**  
Call Letters **WMEB** Channel **25**  
Location  
Customer **Maine Public Broadcasting**  
Antenna Type **TLP-16M (C)**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>16.0 (12.04 dB)</b>	Beam Tilt	<b>1.00 Degrees</b>
RMS Gain at Horizontal	<b>11.3 (10.53 dB)</b>	Frequency	<b>539.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>16L160100-90</b>



Remarks:



Date **11 Dec 2009**  
 Call Letters **WMEB** Channel **25**  
 Location  
 Customer **Maine Public Broadcasting**  
 Antenna Type **TLP-16M (C)**

**TABULATION OF ELEVATION PATTERN**

Elevation Pattern Drawing # **16L160100-90**

Angle	Field										
-10.0	0.283	2.4	0.711	10.6	0.102	30.5	0.020	51.0	0.030	71.5	0.124
-9.5	0.238	2.6	0.635	10.8	0.114	31.0	0.010	51.5	0.029	72.0	0.121
-9.0	0.167	2.8	0.556	11.0	0.127	31.5	0.027	52.0	0.027	72.5	0.118
-8.5	0.083	3.0	0.476	11.5	0.151	32.0	0.044	52.5	0.023	73.0	0.113
-8.0	0.036	3.2	0.397	12.0	0.159	32.5	0.055	53.0	0.017	73.5	0.107
-7.5	0.096	3.4	0.324	12.5	0.150	33.0	0.057	53.5	0.012	74.0	0.101
-7.0	0.141	3.6	0.259	13.0	0.128	33.5	0.052	54.0	0.008	74.5	0.094
-6.5	0.149	3.8	0.209	13.5	0.100	34.0	0.040	54.5	0.014	75.0	0.087
-6.0	0.119	4.0	0.180	14.0	0.077	34.5	0.024	55.0	0.026	75.5	0.081
-5.5	0.066	4.2	0.175	14.5	0.062	35.0	0.009	55.5	0.040	76.0	0.074
-5.0	0.081	4.4	0.189	15.0	0.052	35.5	0.014	56.0	0.057	76.5	0.067
-4.5	0.163	4.6	0.211	15.5	0.038	36.0	0.025	56.5	0.075	77.0	0.060
-4.0	0.233	4.8	0.233	16.0	0.021	36.5	0.034	57.0	0.094	77.5	0.054
-3.5	0.263	5.0	0.251	16.5	0.030	37.0	0.041	57.5	0.113	78.0	0.048
-3.0	0.237	5.2	0.262	17.0	0.057	37.5	0.050	58.0	0.131	78.5	0.043
-2.8	0.209	5.4	0.266	17.5	0.083	38.0	0.064	58.5	0.147	79.0	0.038
-2.6	0.172	5.6	0.263	18.0	0.098	38.5	0.084	59.0	0.161	79.5	0.033
-2.4	0.127	5.8	0.253	18.5	0.099	39.0	0.105	59.5	0.171	80.0	0.029
-2.2	0.081	6.0	0.237	19.0	0.088	39.5	0.125	60.0	0.177	80.5	0.025
-2.0	0.066	6.2	0.216	19.5	0.067	40.0	0.140	60.5	0.179	81.0	0.022
-1.8	0.113	6.4	0.191	20.0	0.046	40.5	0.148	61.0	0.177	81.5	0.019
-1.6	0.187	6.6	0.163	20.5	0.039	41.0	0.149	61.5	0.170	82.0	0.016
-1.4	0.270	6.8	0.135	21.0	0.047	41.5	0.141	62.0	0.159	82.5	0.014
-1.2	0.357	7.0	0.107	21.5	0.051	42.0	0.125	62.5	0.145	83.0	0.012
-1.0	0.446	7.2	0.083	22.0	0.045	42.5	0.105	63.0	0.128	83.5	0.010
-0.8	0.534	7.4	0.067	22.5	0.025	43.0	0.081	63.5	0.108	84.0	0.008
-0.6	0.620	7.6	0.062	23.0	0.012	43.5	0.059	64.0	0.087	84.5	0.007
-0.4	0.700	7.8	0.068	23.5	0.047	44.0	0.043	64.5	0.065	85.0	0.006
-0.2	0.774	8.0	0.079	24.0	0.084	44.5	0.038	65.0	0.044	85.5	0.005
0.0	0.840	8.2	0.090	24.5	0.117	45.0	0.043	65.5	0.029	86.0	0.004
0.2	0.896	8.4	0.099	25.0	0.140	45.5	0.049	66.0	0.027	86.5	0.003
0.4	0.941	8.6	0.104	25.5	0.150	46.0	0.051	66.5	0.040	87.0	0.002
0.6	0.973	8.8	0.106	26.0	0.147	46.5	0.048	67.0	0.056	87.5	0.002
0.8	0.993	9.0	0.104	26.5	0.133	47.0	0.042	67.5	0.072	88.0	0.001
1.0	1.000	9.2	0.100	27.0	0.113	47.5	0.032	68.0	0.086	88.5	0.001
1.2	0.993	9.4	0.094	27.5	0.093	48.0	0.020	68.5	0.098	89.0	0.000
1.4	0.974	9.6	0.087	28.0	0.078	48.5	0.008	69.0	0.108	89.5	0.000
1.6	0.942	9.8	0.082	28.5	0.069	49.0	0.007	69.5	0.115	90.0	0.000
1.8	0.898	10.0	0.080	29.0	0.062	49.5	0.016	70.0	0.120		
2.0	0.844	10.2	0.084	29.5	0.053	50.0	0.023	70.5	0.123		
2.2	0.781	10.4	0.091	30.0	0.039	50.5	0.028	71.0	0.124		

Remarks:

TABLE II  
DTV COVERAGE DATA  
FOR PROPOSED TRANSLATOR OPERATION OF  
EAST EDDINGTON, MAINE  
CHANNEL 25 15 KW MAX ERP 387.8 METERS RC/AMSL  
DECEMBER 2009

<u>Radial Bearing</u> N ° E, T	<u>Average* Elevation</u> <u>3 to 16.1 km</u> meters	<u>Effective Height</u> meters	<u>Depression Angle</u> degrees	<u>ERP At Radio Horizon</u> kW	<u>Distance to Contour</u> <u>F(50/90)</u> <u>41 dBu</u> <u>Noise-Limited</u> km
0	47.5	340.3	0.511	9.600	67.6
10	49.1	338.7	0.510	6.814	65.7
20	55.6	332.2	0.505	4.072	62.6
30	73.1	314.7	0.491	1.944	57.8
40	109.9	277.9	0.462	0.700	50.1
50	148.0	239.8	0.429	0.261	43.0
60	137.5	250.3	0.438	0.286	44.0
70	114.8	273.0	0.458	0.389	46.7
80	113.1	274.7	0.459	0.360	46.4
90	105.9	281.9	0.465	0.246	44.8
100	87.3	300.5	0.480	0.360	47.8
110	75.1	312.7	0.490	1.094	54.5
120	83.1	304.7	0.484	2.697	59.0
130	90.3	297.5	0.478	5.133	62.0
140	112.5	275.3	0.460	7.950	62.9
150	83.0	304.8	0.484	10.584	66.0
160	91.5	296.3	0.477	12.586	66.4
170	122.4	265.4	0.451	13.795	65.0
180	149.8	238.0	0.427	14.377	63.5
190	149.4	238.4	0.428	14.642	63.7
200	149.5	238.3	0.428	14.791	63.7
210	139.2	248.6	0.437	14.910	64.4
220	105.3	282.5	0.466	15.000	66.4
230	88.0	299.8	0.480	15.000	67.5
240	93.5	294.3	0.475	14.970	67.2
250	107.2	280.7	0.464	14.940	66.3
260	76.6	311.2	0.489	14.940	68.2
270	52.8	335.0	0.507	14.970	69.8

TABLE II  
DTV COVERAGE DATA  
FOR PROPOSED TRANSLATOR OPERATION OF  
EAST EDDINGTON, MAINE  
CHANNEL 25 15 KW MAX ERP 387.8 METERS RC/AMSL  
DECEMBER 2009

<u>Radial Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3 to 16.1 km</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>F(50/90)</u> <u>41 dBu</u> <u>Noise-Limited</u> km
280	51.8	336.0	0.508	15.000	69.9
290	46.8	341.0	0.512	14.970	70.3
300	50.9	336.9	0.508	14.880	69.9
310	58.5	329.3	0.503	14.731	69.4
320	58.4	329.4	0.503	14.553	69.3
330	53.2	334.6	0.507	14.201	69.5
340	49.4	338.4	0.510	13.395	69.4
350	47.4	340.4	0.511	11.882	68.9

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

DTV Channel 25 (536-542 MHz)  
Center of Radiation 387.8 meters AMSL  
Effective Radiated Power 15 kW (11.76 dBk) Max

North Latitude: 44° 45' 45"  
West Longitude: 68° 33' 58"

(NAD-27)

TABLE III  
DTV COVERAGE DATA  
FOR LICENSED OPERATION OF  
WMEB-TV, ORONO, MAINE  
CHANNEL 9 15 KW DA ERP 375 METERS HAAT  
DECEMBER 2009

<u>Radial Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3 to 16.1 km</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>F(50/90)</u> <u>36 dBu</u> <u>City Grade</u> km
0	83.7	406.3	0.558	4.134	93.1
10	71.6	418.4	0.567	3.902	93.3
20	69.0	421.0	0.568	3.602	92.9
30	69.9	420.1	0.568	3.038	91.5
40	69.6	420.4	0.568	2.646	90.5
50	66.4	423.6	0.570	2.400	90.0
60	71.9	418.1	0.566	2.400	89.6
70	70.0	420.0	0.568	2.709	90.6
80	83.2	406.8	0.559	3.384	91.6
90	98.3	391.7	0.548	4.538	92.9
100	103.1	386.9	0.545	5.400	94.0
110	111.8	378.2	0.539	6.936	95.3
120	107.9	382.1	0.541	8.438	97.1
130	100.5	389.5	0.547	10.086	99.0
140	102.4	387.6	0.545	11.882	100.2
150	104.9	385.1	0.544	12.696	100.5
160	108.4	381.6	0.541	13.538	100.8
170	122.6	367.4	0.531	15.000	100.5
180	136.7	353.3	0.521	15.000	99.5
190	145.2	344.8	0.514	15.000	98.8
200	152.6	337.4	0.509	13.538	97.4
210	185.6	304.4	0.483	12.696	94.4
220	196.7	293.3	0.474	11.882	93.3
230	225.5	264.5	0.450	10.086	90.9
240	177.9	312.1	0.489	8.438	91.8
250	134.7	355.3	0.522	6.936	93.6
260	128.5	361.5	0.527	5.400	92.1
270	106.2	383.8	0.543	4.538	92.4

TABLE III  
DTV COVERAGE DATA  
FOR LICENSED OPERATION OF  
WMEB-TV, ORONO, MAINE  
CHANNEL 9 15 KW DA ERP 375 METERS HAAT  
DECEMBER 2009

<u>Radial Bearing</u> N ° E, T	<u>Average* Elevation</u> 3 to 16.1 km meters	<u>Effective Height</u> meters	<u>Depression Angle</u> degrees	<u>ERP At Radio Horizon</u> kW	<u>Distance to Contour</u> <u>F(50/90)</u> 36 dBu <u>City Grade</u> km
280	105.7	384.3	0.543	3.384	90.1
290	103.1	386.9	0.545	2.709	88.6
300	93.2	396.8	0.552	2.400	88.3
310	91.9	398.1	0.553	2.400	88.3
320	98.2	391.8	0.548	2.646	88.7
330	109.8	380.2	0.540	3.038	89.0
340	110.6	379.4	0.540	3.602	90.3
350	95.6	394.4	0.550	3.902	91.9

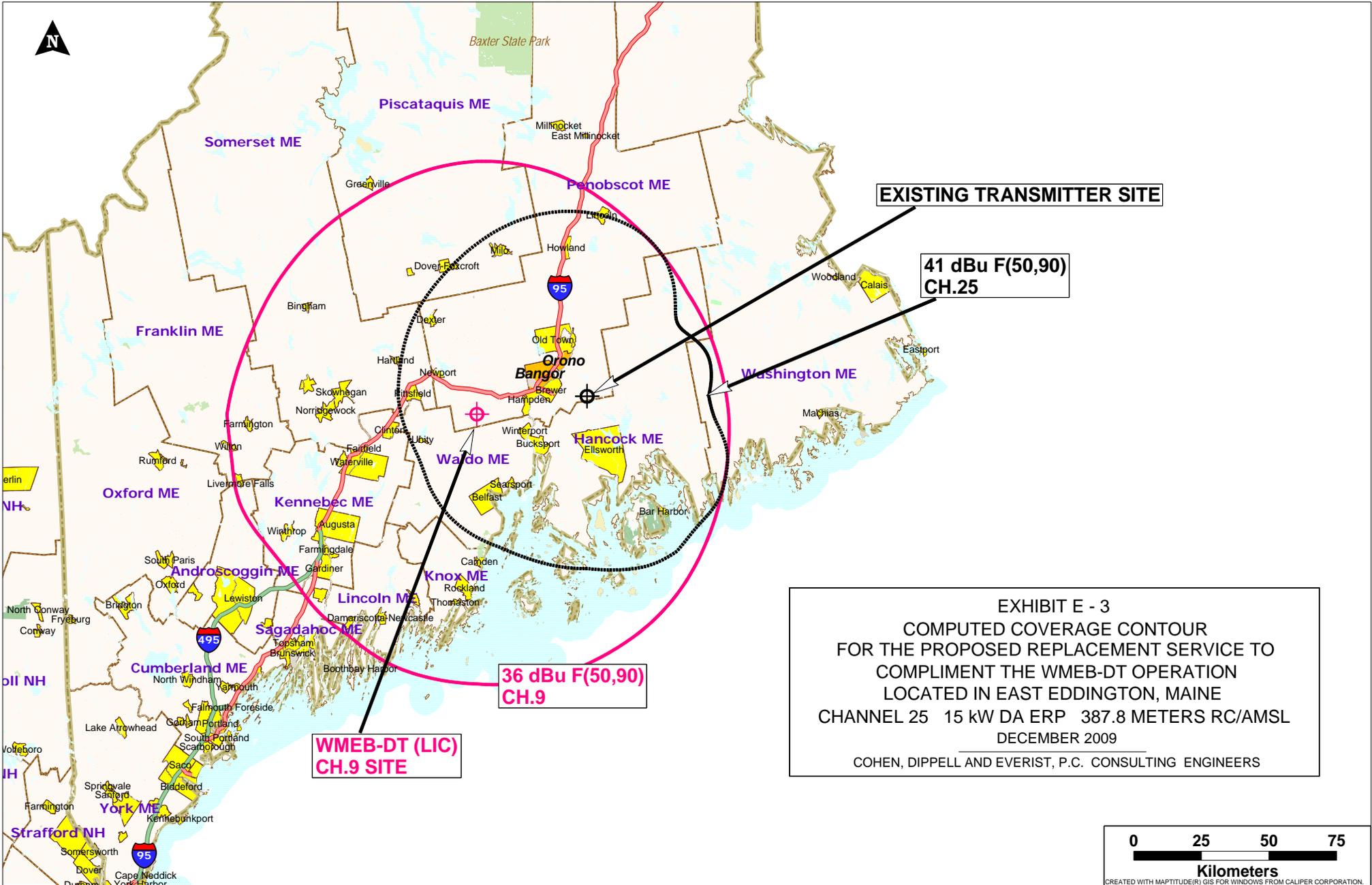
\*Based on data from FCC 3-second data base.

DTV Channel 9 (186-192 MHz)  
Center of Radiation 490 meters AMSL  
Antenna Height Above Average Terrain 375 meters  
Effective Radiated Power 15 kW (11.76 dBk) Max

North Latitude: 44° 42' 11"

West Longitude: 69° 04' 47"

(NAD-27)



**EXISTING TRANSMITTER SITE**

**41 dBu F(50,90)  
CH.25**

**36 dBu F(50,90)  
CH.9**

**WMBE-DT (LIC)  
CH.9 SITE**

**EXHIBIT E - 3**  
**COMPUTED COVERAGE CONTOUR**  
**FOR THE PROPOSED REPLACEMENT SERVICE TO**  
**COMPLIMENT THE WMBE-DT OPERATION**  
**LOCATED IN EAST EDDINGTON, MAINE**  
**CHANNEL 25 15 kW DA ERP 387.8 METERS RC/AMSL**  
**DECEMBER 2009**  
**COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS**



**Section III - Engineering (Digital)**

**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: \_\_\_\_\_
- 2. Translator Input Channel No. \_\_\_\_\_
- 3. Station proposed to be rebroadcast:

Call Sign	City	State	Channel
-----------	------	-------	---------

- 4. Antenna Location Coordinates: (NAD 27)  
\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  N  S Latitude  
\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "  E  W Longitude

- 5. Antenna Structure Registration Number: \_\_\_\_\_  
 Not applicable  See Explanation in Exhibit No.  FAA Notification Filed with FAA

- 6. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters
- 7. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters
- 8. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters
- 9. Maximum Effective Radiated Power (ERP): \_\_\_\_\_ kW
- 10. Transmitter Output Power: \_\_\_\_\_ kW

- 11. a. Transmitting Antenna:  Nondirectional  Directional  Directional composite

Manufacturer	Model
--------------	-------

- b. Electrical Beam Tilt: \_\_\_\_\_ degrees  Not applicable

c. Directional Antenna Relative Field Values:

Rotation: \_\_\_\_\_ °  No rotation  N/A (Nondirectional)

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											

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

12. **Out-of-Channel Emission Mask:** Simple  Stringent

**CERTIFICATION**

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030.  Yes  No See Explanation in Exhibit No.

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. An **Exhibit is required.**  Yes  No See Explanation in Exhibit No.

Exhibit No.

By checking "Yes" above, 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.

15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.

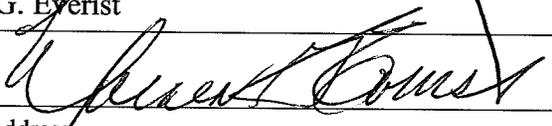
Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

**PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.**

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees,
  
- Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.
  
- Pursuant to Section 74.786(e), an applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

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 December 17, 2009	
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	

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).