

ENGINEERING REPORT RE  
APPLICATION IN SUPPORT OF MODIFICATION OF  
CONSTRUCTION PERMIT (FCC FILE NO. 0000028034)  
FOR REPACKED FACILITIES  
WMEA-DT, BIDDEFORD, MAINE  
CHANNEL 36 149 KW 231 METERS

OCTOBER 2017

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         )

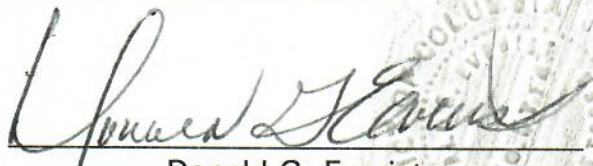
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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 1420 N Street, N.W., Suite One, 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 23<sup>rd</sup> day of October, 2017.



  
Notary Public

My Commission Expires: 2/28/2018

### Introduction

This engineering report has been prepared on behalf of Maine Public Broadcasting Corporation, licensee of TV station WMEA-TV, Biddeford, Maine, in support of its application for modification of construction permit (FCC File No. 0000028034) for repacked facilities pursuant to DA 17-314. At present, WMEA-TV operates on digital Channel 45 with 50 kW effective radiated power ("ERP") and 231 meters antenna height above average terrain ("HAAT").

WMEA-TV has been allotted Channel 36 in the incentive auction repack with 42.1 kW maximum ERP and 231 meters HAAT from its digital Channel 45 antenna site. It is proposed to operate WMEA-TV on Channel 36 with a directional ERP of 149 kW at 231 meters HAAT.

### Antenna Site

It is proposed to install the Channel 36 DTV antenna at the same location as the existing Channel 45 antenna on the existing tower. The geographic coordinates (NAD-27) of the existing tower are as follows.

North Latitude: 43° 25' 00"

West Longitude: 70° 48' 17"

NAD-27

North Latitude: 43° 25' 00.3"

West Longitude: 70° 48' 15.2"

NAD-83

The following data shows the pertinent information concerning the proposed DTV operation.

Power Data

Transmitter output		5.0 kW	6.99 dBk
Filter Loss			0.5 dB
Transmission line efficiency/loss 600 feet (182.8 meters) 6-1/8" rigid Dielectric		84.7%	0.72 dB
Input power to the antenna		3.78 kW	5.77 dBk
Antenna power gain (Main Lobe)	Horizontal	39.49	15.97 dB
Effective Radiated Power	Horizontal Vertical	149 kW	21.7 dBk

Antenna and Elevation Data

Antenna:	Dielectric	Model TFU-18ETT-R S240
	Beam Tilt	0.75 degrees electrical
Elevation of the site above mean sea level:		192.2 meters (629.9 feet)
Elevation of the top of supporting structure: above ground		163.3 meters (535.8 feet)
Elevation of the top of existing structure: above mean sea level		355.3 meters (1165.7 feet)
Height of DTV antenna radiation center: meters above ground		157.4 meters (516.4 feet)
Height of DTV antenna radiation center: above mean sea level		349.4 meters (1146.3 feet)

Height of DTV antenna radiation center: 231 meters  
above average terrain

The attached Exhibit E-1 shows a vertical sketch of the proposed WMEA-TV antenna supporting structure. The FCC tower registration number is 1037792.

#### Topographic Data

The average elevation data of the eight cardinal and other radials, from 3.2 to 16.1 kilometers has been previously established.

#### Contour Data

Utilizing the formula in Section 73.625(b)(2) for the effective heights shown on the attached tabulation, the depression angle  $A_h$ , for each azimuth has been calculated. The maximum radiation values has been used to calculate ERP where the vertical radiation pattern at these angles is greater than 90% of the maximum. Exhibit E-2 provides the antenna manufacturer data.

The distances along each radial to the limits of F(50,90) 48 and 40.848 dBu contours were determined as specified in Section 73.625(b) by reference to the propagation data for Channels 14-69, as published by the Commission in Figures 10b and 10c, Section 73.699 of its rules.

The distances along the radials spaced every ten degrees to the 48 and 40.858 dBu contours, the average elevations, and the effective antenna heights are included on the attached tabulation (Table I). The 48 and 40.858 dBu contours determined from these distances are shown on the attached map (Exhibit E-3).

Environmental Statement

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997.

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

WMEA-TV proposes to operate with a maximum effective radiated power of 149 kW and a radiation center of 157.4 meters above ground level. The TV antenna relative field factor is 0.125 in the downward direction ( $10^\circ$  to  $90^\circ$ ). It is calculated that proposed operation would have less than one microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ) RF field at 2 meters above the base of tower. The Commission's MPE guidelines for Channel 36 (602-608 MHz) TV operation are  $2,017 \mu\text{W}/\text{cm}^2$  for the occupational/controlled and  $403 \mu\text{W}/\text{cm}^2$  for the general population/uncontrolled environment. The computed RF field due to the proposed operation would be less than one percent of the MPE for the general population/uncontrolled environment.

Therefore, members of the public and personnel working around the proposed TV facility would not be exposed to RF fields exceeding the Commission's guidelines. With respect to work performed on the tower, station WMEA-TV in coordination with other communication operations that may be on the tower will establish procedures to ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from the environmental processing.

- (a)(8) The existing tower lighting will remain unchanged.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin 65 (Edition 97-01) and Supplement A. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines. A security fence with a locked gate precludes access to the tower site.

ABOVE GROUND

ABOVE MEAN SEA LEVEL

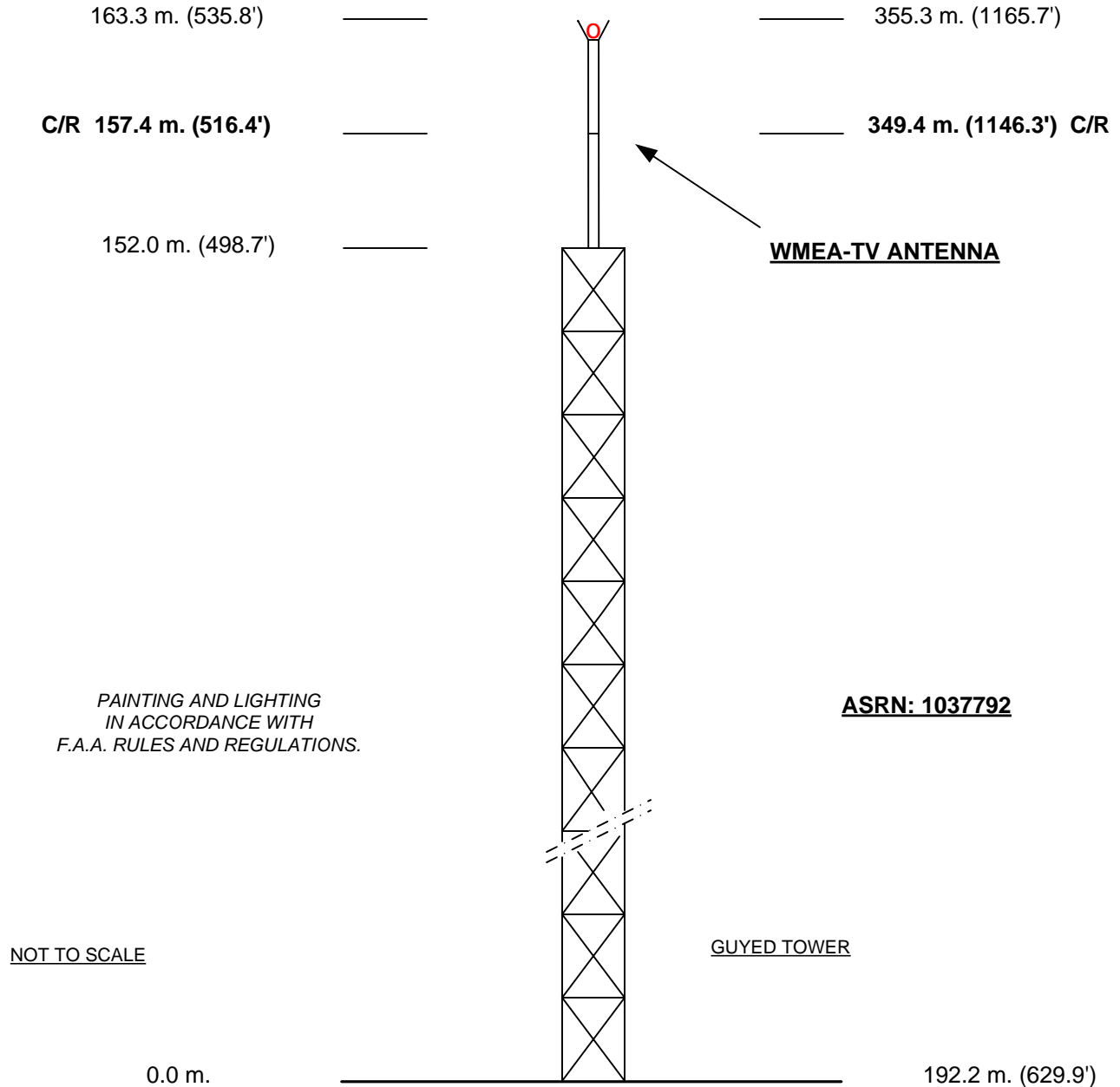


EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE REPACKING OPERATION OF  
**WMEA-TV, BIDDEFORD, MAINE**  
CHANNEL 36 42.1 kW ERP 231 METERS HAAT  
OCTOBER 2017

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers



EXHIBIT E-2

ANTENNA MANUFACTURER DATA



Antenna Model:

**TFU-18ETT-R S240**

Proposal Number: **C-70886**  
Date: **15-Jun-17**  
Customer: **Maine PBS**  
Location: **Biddeford, ME**

### Electrical Specifications

Polarization:	<b>Horizontal</b>		
Azimuth Pattern:	<b>Directional</b>		
Antenna Input:	<b>3-1/8"</b>	<b>50 Ohm</b>	<b>EIA/DCA</b>
VSWR:	<b>Channel</b>	<b>1.08 : 1</b>	
Bandwidth:	<b>6 MHz</b>		
Rated Input Power:	<b>5 kW</b>	<b>(6.99 dBk)</b>	<b>Maximum Average Power</b>

### Mechanical Specifications

Mounting:	<b>Top Mounted</b>		
Environmental Protection:	<b>Full Radome</b>		
Height:	<b>33.7 ft (10.3m)</b>	less Lightning Protector	<b>37.7 ft (11.5m)</b> with Lightning Protector
Weight:	<b>5050 lb (2.3t)</b>	Excludes Mounts	
Effective Projected Area:	<b>35.3 ft² (3.3m²)</b>	<b>TIA-222-G</b>	Basic Wind Speed: <b>100 m/h (160.9 km/h)</b>

### Channel Specifications

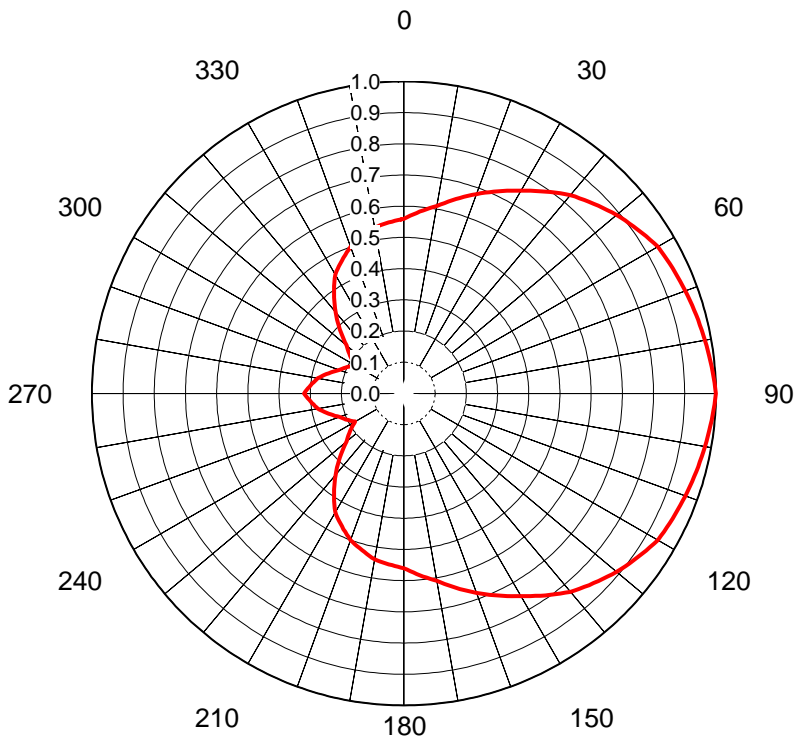
Call	CH	Freq	Peak Main Lobe Hpol Gain
WMEA	36	605 MHz	39.49 (15.97dB)

Andre J Skalina  
I have reviewed this document  
'00'04- 11:44:19 2017.06.22

*QSP*

## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70886**  
 Date **15-Jun-17**  
 Call Letters **WMEA**  
 Channel **36**  
 Frequency **605 MHz**  
 Antenna Type **TFU-18ETT-R S240**  
 Gain **2.38 (3.76dB)**  
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.560	36	0.798	72	0.964	108	0.964	144	0.798	180	0.560	216	0.380	252	0.232	288	0.232
1	0.565	37	0.806	73	0.966	109	0.962	145	0.790	181	0.558	217	0.370	253	0.238	289	0.226
2	0.570	38	0.814	74	0.968	110	0.960	146	0.782	182	0.556	218	0.360	254	0.244	290	0.220
3	0.575	39	0.822	75	0.970	111	0.958	147	0.774	183	0.554	219	0.350	255	0.250	291	0.216
4	0.580	40	0.830	76	0.972	112	0.956	148	0.766	184	0.552	220	0.340	256	0.256	292	0.212
5	0.585	41	0.836	77	0.974	113	0.954	149	0.758	185	0.550	221	0.330	257	0.262	293	0.208
6	0.590	42	0.842	78	0.976	114	0.952	150	0.750	186	0.548	222	0.320	258	0.268	294	0.204
7	0.595	43	0.848	79	0.978	115	0.950	151	0.743	187	0.546	223	0.310	259	0.274	295	0.200
8	0.600	44	0.854	80	0.980	116	0.948	152	0.736	188	0.544	224	0.300	260	0.280	296	0.196
9	0.605	45	0.860	81	0.982	117	0.946	153	0.729	189	0.542	225	0.290	261	0.284	297	0.192
10	0.610	46	0.866	82	0.984	118	0.944	154	0.722	190	0.540	226	0.280	262	0.288	298	0.188
11	0.617	47	0.872	83	0.986	119	0.942	155	0.715	191	0.536	227	0.270	263	0.292	299	0.184
12	0.624	48	0.878	84	0.988	120	0.940	156	0.708	192	0.532	228	0.260	264	0.296	300	0.180
13	0.631	49	0.884	85	0.990	121	0.935	157	0.701	193	0.528	229	0.250	265	0.300	301	0.186
14	0.638	50	0.890	86	0.992	122	0.930	158	0.694	194	0.524	230	0.240	266	0.304	302	0.192
15	0.645	51	0.895	87	0.994	123	0.925	159	0.687	195	0.520	231	0.234	267	0.308	303	0.198
16	0.652	52	0.900	88	0.996	124	0.920	160	0.680	196	0.516	232	0.228	268	0.312	304	0.204
17	0.659	53	0.905	89	0.998	125	0.915	161	0.673	197	0.512	233	0.222	269	0.316	305	0.210
18	0.666	54	0.910	90	1.000	126	0.910	162	0.666	198	0.508	234	0.216	270	0.320	306	0.216
19	0.673	55	0.915	91	0.998	127	0.905	163	0.659	199	0.504	235	0.210	271	0.316	307	0.222
20	0.680	56	0.920	92	0.996	128	0.900	164	0.652	200	0.500	236	0.204	272	0.312	308	0.228
21	0.687	57	0.925	93	0.994	129	0.895	165	0.645	201	0.494	237	0.198	273	0.308	309	0.234
22	0.694	58	0.930	94	0.992	130	0.890	166	0.638	202	0.488	238	0.192	274	0.304	310	0.240
23	0.701	59	0.935	95	0.990	131	0.884	167	0.631	203	0.482	239	0.186	275	0.300	311	0.250
24	0.708	60	0.940	96	0.988	132	0.878	168	0.624	204	0.476	240	0.180	276	0.296	312	0.260
25	0.715	61	0.942	97	0.986	133	0.872	169	0.617	205	0.470	241	0.184	277	0.292	313	0.270
26	0.722	62	0.944	98	0.984	134	0.866	170	0.610	206	0.464	242	0.188	278	0.288	314	0.280
27	0.729	63	0.946	99	0.982	135	0.860	171	0.605	207	0.458	243	0.192	279	0.284	315	0.290
28	0.736	64	0.948	100	0.980	136	0.854	172	0.600	208	0.452	244	0.196	280	0.280	316	0.300
29	0.743	65	0.950	101	0.978	137	0.848	173	0.595	209	0.446	245	0.200	281	0.274	317	0.310
30	0.750	66	0.952	102	0.976	138	0.842	174	0.590	210	0.440	246	0.204	282	0.268	318	0.320
31	0.758	67	0.954	103	0.974	139	0.836	175	0.585	211	0.430	247	0.208	283	0.262	319	0.330
32	0.766	68	0.956	104	0.972	140	0.830	176	0.580	212	0.420	248	0.212	284	0.256	320	0.340
33	0.774	69	0.958	105	0.970	141	0.822	177	0.575	213	0.410	249	0.216	285	0.250	321	0.350
34	0.782	70	0.960	106	0.968	142	0.814	178	0.570	214	0.400	250	0.220	286	0.244	322	0.360
35	0.790	71	0.962	107	0.966	143	0.806	179	0.565	215	0.390	251	0.226	287	0.238	323	0.370

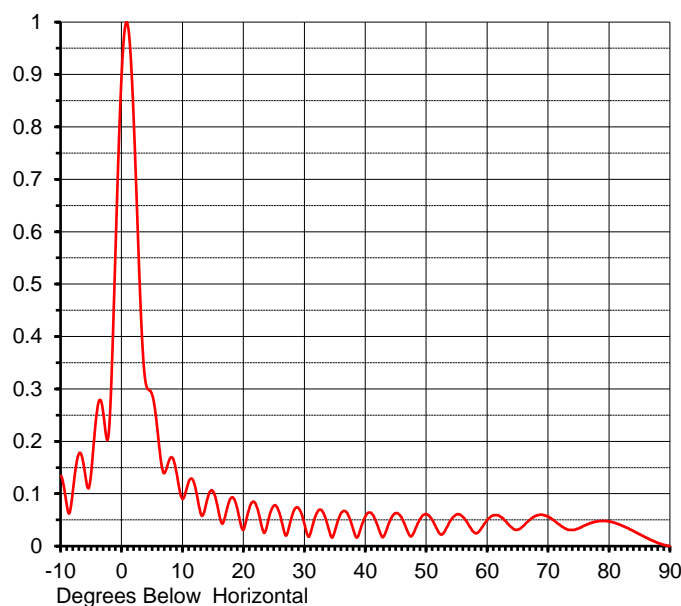
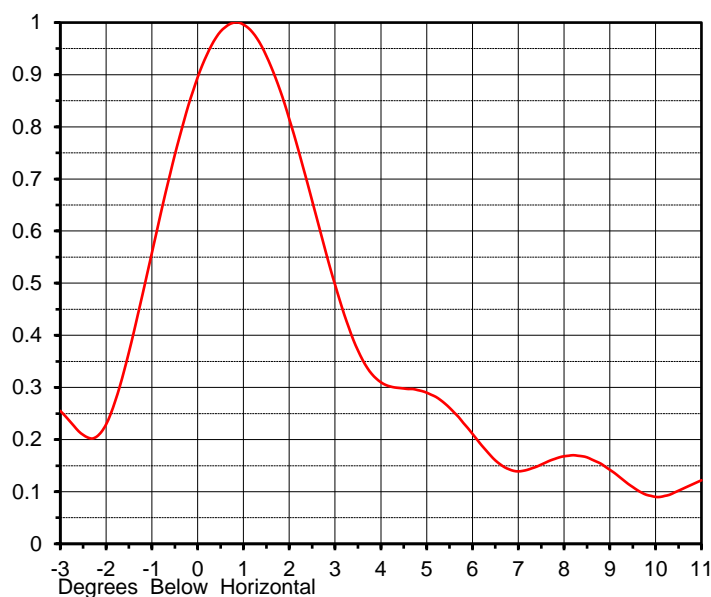
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## ELEVATION PATTERN

Proposal No. **C-70886**  
 Date **15-Jun-17**  
 Call Letters **WMEA**  
 Channel **36**  
 Frequency **605 MHz**  
 Antenna Type **TFU-18ETT-R S240**

RMS Directivity at Main Lobe **16.6 ( 12.20 dB )**  
 RMS Directivity at Horizontal **14.0 ( 11.46 dB )**  
**Calculated**

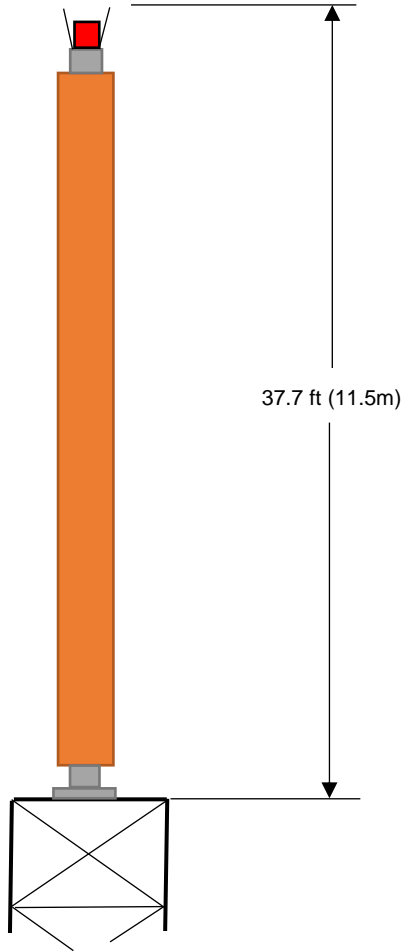
Beam Tilt **0.75 deg**  
 Pattern Number **18E166075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.134	10.0	0.090	30.0	0.039	50.0	0.061	70.0	0.056
-9.0	0.073	11.0	0.125	31.0	0.028	51.0	0.048	71.0	0.048
-8.0	0.113	12.0	0.113	32.0	0.064	52.0	0.026	72.0	0.039
-7.0	0.178	13.0	0.059	33.0	0.064	53.0	0.029	73.0	0.032
-6.0	0.132	14.0	0.090	34.0	0.029	54.0	0.050	74.0	0.031
-5.0	0.149	15.0	0.103	35.0	0.032	55.0	0.061	75.0	0.034
-4.0	0.267	16.0	0.057	36.0	0.064	56.0	0.055	76.0	0.040
-3.0	0.246	17.0	0.061	37.0	0.062	57.0	0.038	77.0	0.044
-2.0	0.249	18.0	0.093	38.0	0.029	58.0	0.025	78.0	0.047
-1.0	0.597	19.0	0.067	39.0	0.028	59.0	0.035	79.0	0.048
0.0	0.918	20.0	0.033	40.0	0.058	60.0	0.051	80.0	0.047
1.0	0.990	21.0	0.077	41.0	0.062	61.0	0.059	81.0	0.044
2.0	0.786	22.0	0.078	42.0	0.037	62.0	0.057	82.0	0.039
3.0	0.468	23.0	0.034	43.0	0.020	63.0	0.047	83.0	0.034
4.0	0.305	24.0	0.050	44.0	0.049	64.0	0.035	84.0	0.028
5.0	0.286	25.0	0.078	45.0	0.063	65.0	0.032	85.0	0.022
6.0	0.200	26.0	0.056	46.0	0.051	66.0	0.040	86.0	0.016
7.0	0.140	27.0	0.021	47.0	0.024	67.0	0.051	87.0	0.011
8.0	0.169	28.0	0.062	48.0	0.029	68.0	0.058	88.0	0.006
9.0	0.136	29.0	0.072	49.0	0.053	69.0	0.060	89.0	0.002
								90.0	0.000

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## MECHANICAL SPECIFICATIONS



Proposal No. **C-70886**  
 Date **15-Jun-17**  
 Call Letters **WMEA**  
 Channel **36**  
 Frequency **605 MHz**  
 Antenna Type **TFU-18ETT-R S240**

### Preliminary Specifications

#### Top Mounted

#### With ice TIA-222-G

Basic Wind Speed 100 m/h (160.9 km/h)

Structure Class II

Exposure Category C

Topography Category 3

Height of Crest 200 ft (61 m)

Design Ice 1 in  $t_{iz} = 2.74$  in

Wind Speed w/Ice 40 m/h (64.4 km/h)

#### Mechanical Specifications

		without ice	with ice
Height with Lightning Protector	H4	37.7 ft (11.5m)	
Height less Lightning Protector	H2	33.7 ft (10.3m)	
Height of Center of Radiation	H3	16.85 ft (5.1m)	
Effective Projected Area	(EPA) <sub>S</sub>	35.3 ft² (3.3m²)	106.7 ft² (9.9m²)
Moment Arm	D1	18.6 ft (5.7m)	19.8 ft (6m)

Weight W 5050 lb (2.3t) 8550 lb (3.9t)

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: KLP

Date: 15-Jun-17

ME: SPJC

EE:

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EXHIBIT E-3

ALLOCATION STUDY

tvstudy v2.2.3 (Dxtpx3)  
Database: localhost, Study: WMEA-Increase, Model: Longley-Rice  
Start: 2017.10.23 12:24:12

Study created: 2017.10.23 12:19:21

Study build station data: LMS TV 2017-10-19 (22)

Proposal: WMEA-TV D36 DT CP BIDDEFORD, ME  
File number: PowerIncrease  
Facility ID: 39656  
Station data: User record  
Record ID: 95  
Country: U.S.  
Zone: I

Search options:

Non-U.S. records included

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	127.4 km
WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	127.4
WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	245.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36  
Latitude: 43 25 0.30 N (NAD83)  
Longitude: 70 48 15.20 W  
Height AMSL: 349.4 m  
HAAT: 231.0 m  
Peak ERP: 149 kW  
Antenna: Dielectric-TFU-18ETT-R S240 (ID 1001757) 90.0 deg  
Elev Pattnr: Generic  
Elec Tilt: 0.8

40.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	46.7 kW	161.5 m	64.2 km
45.0	110	254.5	75.3
90.0	149	284.0	79.4
135.0	110	279.0	77.2
180.0	46.7	256.0	70.9
225.0	12.5	261.5	64.5
270.0	15.3	195.3	61.1
315.0	12.5	160.1	57.8

\*\*Proposal service area extends beyond baseline plus 1.0%  
Proposal service area population is more than 95.0% of baseline

\*\*Proposal is within coordination distance of Canadian border  
Distance to Canadian border: 185.9 km

Distance to Mexican border: 3052.2 km

Conditions at FCC monitoring station: Belfast ME  
Bearing: 49.7 degrees Distance: 179.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 274.6 degrees Distance: 2855.2 km

Study cell size: 2.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

-----  
Interference to BLANK0000024842 APP, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
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Desired:	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	127.4 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	127.4
	WTIC-TV	D34	DT	CP	HARTFORD, CT	BLANK0000025068	149.6
	WFXT	D34	DT	CP	BOSTON, MA	BLANK0000027179	0.9
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	292.8
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	144.1

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	28090.1	7,340,987	27036.9	7,255,983	26752.1	7,242,013	26728.2	7,238,193	0.09 0.05

Undesired			Total IX		Unique IX, before		Unique IX, after
WMEA-TV D36 DT BL	4.0		153	4.0	153		
WMEA-TV D36 DT CP	27.9		3,973			27.9	3,973
WTIC-TV D34 DT CP	76.2		3,085	16.1	750	16.1	750
WFXT D34 DT CP	60.1		3,291	60.1	3,291	60.1	3,291
WNJU D35 DT CP	184.6		9,278	136.5	7,357	136.5	7,357
WFSB D36 DT CP	44.0		1,500	8.0	84	8.0	84

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Interference to DTVBL72145 BL, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	127.4 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	127.4
	WTIC-TV	D34	DT	CP	HARTFORD, CT	BLANK0000025068	149.6
	WFXT	D34	DT	CP	BOSTON, MA	BLANK0000027179	1.0
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	292.8
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	144.1

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	27849.3	7,319,209	26844.1	7,240,828	26523.3	7,227,196	26503.4	7,224,564	0.08 0.04

Undesired			Total IX		Unique IX, before		Unique IX, after
WMEA-TV D36 DT BL	4.0		105	4.0	105		
WMEA-TV D36 DT CP	23.9		2,737			23.9	2,737
WTIC-TV D34 DT CP	72.2		3,028	16.1	750	16.1	750

WFXT D34 DT CP	104.2	3,045	104.2	3,045	104.2	3,045
WNJU D35 DT CP	176.6	9,234	132.5	7,370	132.5	7,370
WFSB D36 DT CP	40.0	1,443	8.0	84	8.0	84

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Interference to BLANK0000024832 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	155.3
	WSPX-TV	D36	DT	APP	SYRACUSE, NY	BLANK0000029579	315.4
	Service area	Terrain-limited		IX-free, before		IX-free, after	
	26990.6	4,752,788	24251.4	4,370,519	19942.2	3,613,010	19934.2 3,612,600
							Percent New IX
							0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL	16.0	1,100	0
WMEA-TV D36 DT CP	44.1	3,027	8.0 410
WHDH D35 DT APP	124.1	28,621	24.0 5,942
WNJU D35 DT CP	294.3	124,491	0.0 0
WMGM-TV D36 DT LIC	24.3	12,167	0.0 0
WCBS-TV D36 DT CP	4265.1	751,209	3834.5 594,169
WSPX-TV D36 DT APP	48.1	888	20.0 358

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Interference to BLANK0000024832 CP, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3

WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
WCBS-TV	D36	DT	APP	NEW YORK, NY	BLANK0000033867	155.3
WSPX-TV	D36	DT	APP	SYRACUSE, NY	BLANK0000029579	315.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26990.6 4,752,788	24251.4 4,370,519	19741.6 3,590,310	19733.6 3,589,900	0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL 16.0 1,100	0.0 0		
WMEA-TV D36 DT CP 44.1 3,027	8.0 410		
WHDH D35 DT APP 124.1 28,621	24.0 5,942		
WNJU D35 DT CP 294.3 124,491	0.0 0		
WMGM-TV D36 DT LIC 24.3 12,167	0.0 0		
WCBS-TV D36 DT APP 4465.8 773,909	4035.2 616,869		
WSPX-TV D36 DT APP 48.1 888	20.0 358		

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Interference to BLANK0000024832 CP, scenario 3

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	155.3
	WSPX-TV	D36	DT	APP	SYRACUSE, NY	BLANK0000029579	315.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26990.6 4,752,788	24251.4 4,370,519	19938.2 3,612,751	19930.2 3,612,341	0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL 16.0 1,100	0.0 0		
WMEA-TV D36 DT CP 44.1 3,027	8.0 410		
WHDH D35 DT BL 128.1 28,880	28.0 6,201		
WNJU D35 DT CP 294.3 124,491	0.0 0		
WMGM-TV D36 DT LIC 24.3 12,167	0.0 0		
WCBS-TV D36 DT CP 4265.1 751,209	3834.5 594,169		

WSPX-TV D36 DT APP	48.1	888	20.0	358	20.0	358
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Interference to BLANK0000024832 CP, scenario 4

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	APP	NEW YORK, NY	BLANK0000033867	155.3
	WSPX-TV	D36	DT	APP	SYRACUSE, NY	BLANK0000029579	315.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26990.6 4,752,788	24251.4 4,370,519	19737.6 3,590,051	19729.6 3,589,641	0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL	16.0 1,100	0.0 0	
WMEA-TV D36 DT CP	44.1 3,027		8.0 410
WHDH D35 DT BL	128.1 28,880	28.0 6,201	24.0 6,115
WNJU D35 DT CP	294.3 124,491	0.0 0	0.0 0
WMGM-TV D36 DT LIC	24.3 12,167	0.0 0	0.0 0
WCBS-TV D36 DT APP	4465.8 773,909	4035.2 616,869	4027.1 615,926
WSPX-TV D36 DT APP	48.1 888	20.0 358	20.0 358

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Interference to BLANK0000024832 CP, scenario 5

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	155.3

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26990.6 4,752,788	24251.4 4,370,519	19962.3 3,613,368	19954.2 3,612,958	0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL	16.0 1,100	0.0 0	
WMEA-TV D36 DT CP	44.1 3,027		8.0 410
WHDH D35 DT APP	124.1 28,621	24.0 5,942	20.0 5,856
WNJU D35 DT CP	294.3 124,491	0.0 0	0.0 0
WMGM-TV D36 DT LIC	24.3 12,167	0.0 0	0.0 0
WCBS-TV D36 DT CP	4265.1 751,209	3862.6 594,699	3854.6 593,756

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Interference to BLANK0000024832 CP, scenario 6

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	APP	NEW YORK, NY	BLANK0000033867	155.3

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26990.6 4,752,788	24251.4 4,370,519	19761.6 3,590,668	19753.6 3,590,258	0.04 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
WMEA-TV D36 DT BL	16.0 1,100	0.0 0	
WMEA-TV D36 DT CP	44.1 3,027		8.0 410
WHDH D35 DT APP	124.1 28,621	24.0 5,942	20.0 5,856
WNJU D35 DT CP	294.3 124,491	0.0 0	0.0 0
WMGM-TV D36 DT LIC	24.3 12,167	0.0 0	0.0 0
WCBS-TV D36 DT APP	4465.8 773,909	4063.2 617,399	4055.2 616,456

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Interference to BLANK0000024832 CP, scenario 7

Call	Chan	Svc	Status	City, State	File Number	Distance
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Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	CP	NEW YORK, NY	BLANK0000024605	155.3

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	26990.6	4,752,788	24251.4	4,370,519	19958.3	3,613,109	19950.2	3,612,699	0.04 0.01

Undesired				Total IX	Unique IX, before		Unique IX, after
WMEA-TV D36 DT BL	16.0			1,100	0.0	0	
WMEA-TV D36 DT CP	44.1			3,027			8.0 410
WHDH D35 DT BL	128.1			28,880	28.0	6,201	24.0 6,115
WNJU D35 DT CP	294.3			124,491	0.0	0	0.0 0
WMGM-TV D36 DT LIC	24.3			12,167	0.0	0	0.0 0
WCBS-TV D36 DT CP	4265.1			751,209	3862.6	594,699	3854.6 593,756

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Interference to BLANK0000024832 CP, scenario 8

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	
Undesireds:	WMEA-TV	D36	DT	BL	BIDDEFORD, ME	DTVBL39656	245.1 km
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	245.1
	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	144.1
	WNJU	D35	DT	CP	LINDEN, NJ	BLANK0000027741	155.3
	WMGM-TV	D36	DT	LIC	WILDWOOD, NJ	BLCDT20060626ABE	338.0
	WCBS-TV	D36	DT	APP	NEW YORK, NY	BLANK0000033867	155.3

	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
	26990.6	4,752,788	24251.4	4,370,519	19757.6	3,590,409	19749.6	3,589,999	0.04 0.01

Undesired				Total IX	Unique IX, before		Unique IX, after
WMEA-TV D36 DT BL	16.0			1,100	0.0	0	
WMEA-TV D36 DT CP	44.1			3,027			8.0 410
WHDH D35 DT BL	128.1			28,880	28.0	6,201	24.0 6,115

WNJU D35 DT CP	294.3	124,491	0.0	0	0.0	0
WMGM-TV D36 DT LIC	24.3	12,167	0.0	0	0.0	0
WCBS-TV D36 DT APP	4465.8	773,909	4063.2	617,399	4055.2	616,456

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Interference to proposal, scenario 1  
\*\*MX: 0.93% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	
Undesireds:	WHDH	D35	DT	APP	BOSTON, MA	BLANK0000024842	127.4 km
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	245.1
Service area		Terrain-limited		IX-free		Percent IX	
14916.3	902,755	13895.8	853,857	13736.7	845,947	1.15	0.93
Undesired		Total IX		Unique IX		Prcnt Unique IX	
WHDH D35 DT APP		8.0	1,349	4.0	628	0.03	0.07
WFSB D36 DT CP		155.1	7,282	151.1	6,561	1.09	0.77

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Interference to proposal, scenario 2  
0.93% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WMEA-TV	D36	DT	CP	BIDDEFORD, ME	PowerIncrease	
Undesireds:	WHDH	D35	DT	BL	BOSTON, MA	DTVBL72145	127.4 km
	WFSB	D36	DT	CP	HARTFORD, CT	BLANK0000024832	245.1
Service area		Terrain-limited		IX-free		Percent IX	
14916.3	902,755	13895.8	853,857	13736.7	845,947	1.15	0.93
Undesired		Total IX		Unique IX		Prcnt Unique IX	
WHDH D35 DT BL		8.0	1,349	4.0	628	0.03	0.07
WFSB D36 DT CP		155.1	7,282	151.1	6,561	1.09	0.77

TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
WMEA-TV, BIDDEFORD, MAINE  
CHANNEL 36 149 KW ERP 231 METERS HAAT  
OCTOBER 2017

<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>Effective</u> <u>Radiated</u> <u>Power</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>40.858 dBu</u> km
0	187.9	161.5	0.352	46.7	56.4	64.2
10	167.3	182.1	0.374	55.4	58.5	66.6
20	146.6	202.8	0.394	68.9	60.9	69.1
30	125.9	223.5	0.414	83.8	63.3	71.6
40	105.2	244.2	0.433	102.6	65.7	74.1
50	91.6	257.8	0.445	118.0	67.3	75.9
60	85.1	264.3	0.450	131.6	68.3	77.0
70	78.5	270.9	0.456	137.3	69.0	77.7
80	72.0	277.5	0.461	143.1	69.7	78.6
90	65.4	284.0	0.467	149.0	70.3	79.4
100	66.5	282.9	0.466	143.1	70.0	79.1
110	67.6	281.8	0.465	137.3	69.7	78.7
120	68.8	280.6	0.464	131.6	69.5	78.4
130	69.9	279.5	0.463	118.0	68.8	77.7
140	73.0	276.4	0.461	102.6	67.9	76.6
150	78.1	271.3	0.456	83.8	66.5	75.1
160	83.2	266.2	0.452	68.9	65.1	73.7
170	88.3	261.1	0.448	55.4	63.6	72.2
180	93.4	256.0	0.443	46.7	62.4	70.9
190	92.2	257.2	0.444	43.5	62.1	70.6
200	91.0	258.4	0.445	37.3	61.4	69.9
210	89.8	259.6	0.446	28.9	60.1	68.7
220	88.5	260.9	0.447	17.2	57.5	66.1
230	95.3	254.1	0.442	8.6	53.5	62.0
240	110.0	239.4	0.429	4.8	49.7	58.2
250	124.7	224.7	0.415	7.2	51.0	59.3
260	139.4	210.0	0.401	11.7	52.6	60.8
270	154.1	195.3	0.387	15.3	53.0	61.1



TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
WMEA-TV, BIDDEFORD, MAINE  
CHANNEL 36 149 KW ERP 231 METERS HAAT  
OCTOBER 2017

<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>Effective</u> <u>Radiated</u> <u>Power</u> kW	<u>Distance to Contour</u>	
					<u>48 dBu</u> km	<u>40.858 dBu</u> km
280	162.0	187.4	0.379	11.7	51.3	59.3
290	169.8	179.6	0.371	7.2	48.4	56.5
300	177.6	171.8	0.363	4.8	45.9	54.1
310	185.4	164.0	0.355	8.6	48.3	56.3
320	189.2	160.2	0.351	17.2	51.5	59.3
330	188.9	160.5	0.351	28.9	54.0	61.8
340	188.6	160.8	0.351	37.3	55.3	63.1
350	188.2	161.2	0.352	43.5	56.0	63.8

