

BERNARD R. SEGAL, P. E.  
CONSULTING ENGINEER  
KENSINGTON, MARYLAND

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ENGINEERING EXHIBIT  
AMENDED APPLICATION FOR CONSTRUCTION PERMIT  
WBAL HEARST TELEVISION INC.  
STATION WBAL-TV, BALTIMORE, MARYLAND  
CHANNEL 11 26.6 KW 299 METERS

INTRODUCTION

WBAL Hearst Television Inc. (hereafter, Hearst) is the applicant in BPCDT-20100429AAF for a power increase for Station WBAL-TV from its Channel 11 licensed 5.0 kW ERP to 26.6 kW. The purpose is to provide better coverage of the former analog served population than is afforded by the 5.0 kW operation. Station WBAL-TV is currently operating with ERP of 26.6 kW pursuant to an STA (SeeFCC File Nos. BDSTA-20090713ACP; BEDSTA-20091231AAS).

Upon commencement of the foregoing referenced 5.0 kW operation, Hearst received numerous complaints of no service and unreliable service. Much effort was expended to determine the problems and to improve the conditions of poor reception. In order to assist in the investigations, a Special Temporary Authorization, BDSTA-20090713ACP, was obtained which permitted WBAL-TV digital operation with effective radiated power increased to 26.6 kW to explore the efficacy of the increased power. The investigations made and the results obtained are included in the report that was subsequently submitted to the FCC.

The conclusion reached was that the 26.6 kW operation, meaningfully, helped alleviate many of the situations involving poor and non-existent service. The pending application, BPCDT-20100429AAF, is the offshoot of the investigations made as part of the STA. However, since the submission of the 26.6 kW application, some changes impacting on allocation matters have occurred which warrant updating the pending application. Also, additional supporting information for waiver of the 0.5% new interference caused limit is furnished. Since current procedures do not permit referencing to on-file material, the instant amendment includes a good bit of previously submitted information that is still relevant.

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Engineering Exhibit  
Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

Page 2

INTERFERENCE ANALYSIS

WBAL-TV's 26.6 kW operation is projected to cause new interference that exceeds 0.5 % of the served population of the currently authorized operations of four stations as follows:

1) **WHTM-TV, Harrisburg, PA:** WBAL-TV's 26.6 kW proposal is predicted to cause 1.12% new interference to BLCDT-20040812AAH (Ch. 10, 16.2 kW, 311 meters). In addition, Station WHTM-TV has been issued a construction permit, BPCDT-20080620AGL (Ch. 10, 19.7 kW, 346 meters). The 26.6 kW proposal for WBAL-TV is predicted to cause new interference to 1.61 % of the WHTM-TV's CP served population.

2) **WBRE-TV, Wilkes-Barre, PA:** WBAL-TV's 26.6 kW proposal is predicted to cause 1.07 % new interference to BLCDT-20051123AJX (Ch. 11, 30 kW, 471 meters).

3) **WVPT, Staunton, VA:** Since the submission of BPCDT-20100429AAF, the FCC has granted a construction permit, BPEDT-20081022ABK, for an increase in effective radiated power for WVPT from 3.2 kW to 10 kW. A license application, BLEDT-20100816ACE, to cover BPEDT-20081022ABK is pending. With respect to this 10 kw operation for WVPT, the WBAL-TV 26.6 kW proposal is predicted to cause new interference to 1.34 % of the served WVPT population.

At the time that the WBAL-TV 26.6 kW application was filed, WVPT also operated a Distributed Transmission Service ("DTS") system pursuant to an experimental authorization. FCC records no longer show this DTS system to be in operation.

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

4) **WWPX-TV, Martinsburg, WV:** WBAL-TV's 26.6 kW proposal is predicted to cause 0.55 % new interference to BLCDT-20021108AAX (Ch. 12, 23 kW, 314 meters).

Hearst has secured interference acceptance agreements with the licensees of WHTM-TV and WWPX-TV. The agreements are presented elsewhere as part of the instant application for construction permit. Hearst has been unable to secure interference acceptance agreements with WBRE-TV and WVPT. Waiver of the 0.5% new interference limit relative to these two stations is requested elsewhere as part of the instant application.

#### WAIVER SUPPORT RELATIVE TO WBRE-TV OPERATION

Figure 1 is a map that depicts the predicted 36 dBu contour for WBRE-TV, and the predicted losses due to terrain (shown in green) and interference from present facilities (shown in blue) and the new interference that is predicted from the proposed WBAL-TV operation (shown in brown). Figure 2, Sheet 1 depicts the WBRE-TV 36 dBu contour, as for Figure 1, but the terrain and existing interference cells have been removed. Other services that are available within the WBRE-TV 36 dBu contour have been added. Figure 2, Sheet 2, is the same as Figure 2, Sheet 1, but is in outline form to reduce clutter and to ease the determination of other available services to the "new interference caused" cells. Figure 3 identifies the stations that have contours depicted in Figure 2. Where appropriate, the network affiliations are depicted in Figure 3. The network affiliations were obtained from the FCC's "Map Book For Full-Service Digital Television Stations Having Significant Changes in Coverage".

BERNARD R. SEGAL, P. E.  
CONSULTING ENGINEER  
KENSINGTON, MARYLAND

Engineering Exhibit

Page 4

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

Not all available services have been depicted in Figure 2. Only those sufficient to identify at least five other available services have been depicted. The sole exception is with respect to one cell in Lycoming County. The cell has one other service available and there is no population within this cell. All other new interference cells from WBAL-TV have depicted a minimum of at least five other available services. The maximum depicted number of available services is twenty.

WBRE-TV is affiliated with the NBC network. Virtually the entire "new loss" population will have NBC network access via Stations WGAL, Lancaster, PA and/or WCAU-TV, Philadelphia, PA.

Despite the prediction of 1.07 % new interference from the proposed WBAL-TV operation, as far as is known, no complaints of actual interference to WBRE-TV have been forthcoming, despite the fact that WBAL-TV has been operating since approximately July, 2009, pursuant to a STA with 26.6 kW, as proposed herein.

The proposed WBAL-TV operation will have minimal impact on WBRE-TV. A waiver of the 0.5 % new interference constraint with respect to WBRE-TV is believed warranted.

WAIVER SUPPORT RELATIVE TO WVPT OPERATION

In support of the waiver request with respect to WVPT, it is paramount to note that a license application for the WVPT 10 kW operation is already on file. The application indicates that WVPT is being operated pursuant to automatic program test authority. So, as a practical matter, the prospective WBAL-TV interference to the WVPT currently licensed 3.2 kW operation is, essentially, a paper technicality that will disappear as soon as the FCC grants the WVPT 10 kW license application. The discussion below

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

relates to a waiver of the 0.5% new interference limit with respect to the 10 kW operation of WVPT.

Figure 4 is a map that shows the WVPT 36 dBu service contour and interference thereto from existing sources and the new interference that is predicted to result from the proposed WBAL-TV 26.6 kW operation. The new interference prediction is to 9,259 persons, corresponding to 1.34% of the 694,855 persons predicted to be served currently.

Figure 5, Sheet 1 is a map that shows other full service DTV stations having predicted noise-free service contours within WVPT noise-free contour and within portions of the projected new loss area to WVPT from WBAL-TV's 26.6 kW operation. Figure 5, Sheet 2 shows the same contours as Figure 5, Sheet 1, but is presented in outline format so as to eliminate as much clutter as possible. Figure 6 identifies the stations that are keyed to letters in Figure 5, Sheet 2. The Figure 6 list, also, shows the network affiliation of the station, where appropriate. . The network affiliations were obtained from the FCC's "Map Book For Full-Service Digital Television Stations Having Significant Changes in Coverage".

Figure 5, Sheet 2 demonstrates that no portion of the predicted new interference to WVPT from the proposed 26.6 kW WBAL-TV operation would be left without other service if the WBAL-TV proposal is implemented. The number of other noise-free contours that encompass predicted interference cells ranges from a minimum of one to a maximum of eleven. The map identifies a small area with twelve maximum noise-free services, but this area does not have a predicted area of interference to WVPT from the proposed WBAL-TV operation.

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Engineering Exhibit  
Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

Page 6

The single cell of new interference from WBAL-TV where one other service is available occurs in Pendleton County, WV. This cell has no population. The remaining three cells of predicted new interference in Pendleton County have an aggregate population of 2 persons.

The bulk of the new interference to WVPT occurs in Madison, Albemarle, Greene, Louisa, and Orange Counties in Virginia. The new interference population in these counties totals 8087 persons who have available a minimum of five and a maximum of eleven other services.

WVPT is affiliated with the PBS network. Virtually the entire "new loss" population will have PBS network access via Stations WVPY, Front Royal, VA, WNPB, Morgantown, WV, WCVW, Richmond, VA, WCVE, Richmond, VA, and/or WHTJ Charlottesville, VA.

WVPT, currently, is operating with 10 kW pursuant to program test authority. WBAL-TV has been operating with ERP of 26.6 kW pursuant to a STA since approximately July, 2009. Hearst is unaware of any instance of interference of interference to WVPT, either as for WVPT operating at 10 kW, or for WVPT operating, as formerly, at 3.2 kW.

The proposed WBAL-TV operation will have minimal impact on WVPT. A waiver of the 0.5 % new interference limitation with respect to WVPT is believed warranted.

In performing the various interference studies that are set forth herein, use was made of a program developed by Mr. William Meintel who, also, developed the FCC's

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

TV Interference and Spacing Analysis program. A Sunblade processor was employed.  
The undersigned has replicated FCC results many times in the past in this fashion.

#### PROPOSED OPERATION DETAILS

The proposed operation for WBAL-TV would employ the same antenna as is used, presently. The antenna is a Dielectric, Model, TW-9B-11-R(S) with an electrical beam tilt of 0.75°. The antenna power gain at the 0.75° beam tilt angle is 9.0 (9.54 dB) relative to a dipole. Figure 7 is the elevation relative field radiation pattern for the antenna, and Figure 8 is the tabulation of relative fields for the pattern of Figure 7.

The supporting tower bears ASRN 1035558. The tower's NAD 1927 geographic coordinates are: 39° 20' 05" North Latitude; 76° 39' 03" West Longitude. The antenna radiation center is 286 meters above ground level, and 383 meters above mean sea level.

Figure 9 is a map that depicts the 43 dBu and 36 dBu service contours for the proposed WBAL-TV operation. The map demonstrates that the proposed 26.6 kW operation will produce a 43 dBu contour that encompasses all of Baltimore, as required by the Rules. The underlying supporting data for the contours of Figure 9 are furnished in Figure 10.

#### ENVIRONMENTAL IMPACT CONSIDERATIONS

Environmental impact concerns have been considered if the instant proposal is implemented. Since the site that is to be employed, is already used for broadcasting purposes, only the environmental impact concern relating to radiofrequency radiation (rfr) exposure of humans is germane from among the list of environmentally sensitive conditions listed in Section 1.1307 of the FCC Rules.

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

The WBAL-TV site is shared with Stations WMAR-TV, Channel 38, and WJZ-TV, Channel 13. Consideration has been given to the prospect for human exposure to radiofrequency radiation (rfr) in excess of the FCC's adopted standard for both controlled and uncontrolled location conditions.

The Channel 38 operation for WMAR-TV is for an ERP of 1000 kW, and the Channel 13 operation for Station WJZ-DT is for a maximum ERP of 28.8 kW

An initial test calculation for WBAL-DT, alone, has been performed using the FCC's OET Bulletin 65 suggested methodology to determine if at uncontrolled locations, the power density level contribution of WBAL-DT would exceed the 5 % threshold that could trigger the need for a concerted response with the other two stations for remedial action, in the event of an overexposure condition.

From the elevation pattern of Figure 7 for the WBAL-DT antenna, the relative field for steep depression angles, ranging from 23.5° to 90° below the horizontal plane, does not exceed 0.1. The power density level contribution for WBAL-DT to a test target that is located two meters above ground level at the tower base, using a relative field of 0.1, was determined to be only 0.06 % of the adopted standard's maximum permissible exposure (MPE) level of  $0.2 \text{ mW/cm}^2$  for high VHF band stations. The foregoing determination was made using a distance of 275 meters. This is the distance from the bottom of the antenna to the target. The calculation included a ground reflection coefficient of 1.6. The single WBAL-TV contribution to the ambient power density environment at uncontrolled locations is too low to warrant consideration of the combined impact that could result from the simultaneous operations of the three stations located atop the tower.

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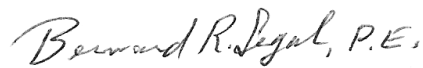
Page 9

Amended Application For Construction Permit  
WBAL Hearst Television Inc.  
Station WBAL-TV, Baltimore, Maryland  
Channel 11, 26.6 kW, 299 Meters

Turning to controlled (worker) exposure matters, the consortium that owns the tower has established procedures for reducing, or terminating, excitation to antennas, if needed, to avoid worker overexposure. The tower is enclosed in a fenced area with access available only to authorized personnel. In addition rfr hazard warning signs are conspicuously posted.

Based on the foregoing, an "Environmental Assessment" is not required for the proposed operation.

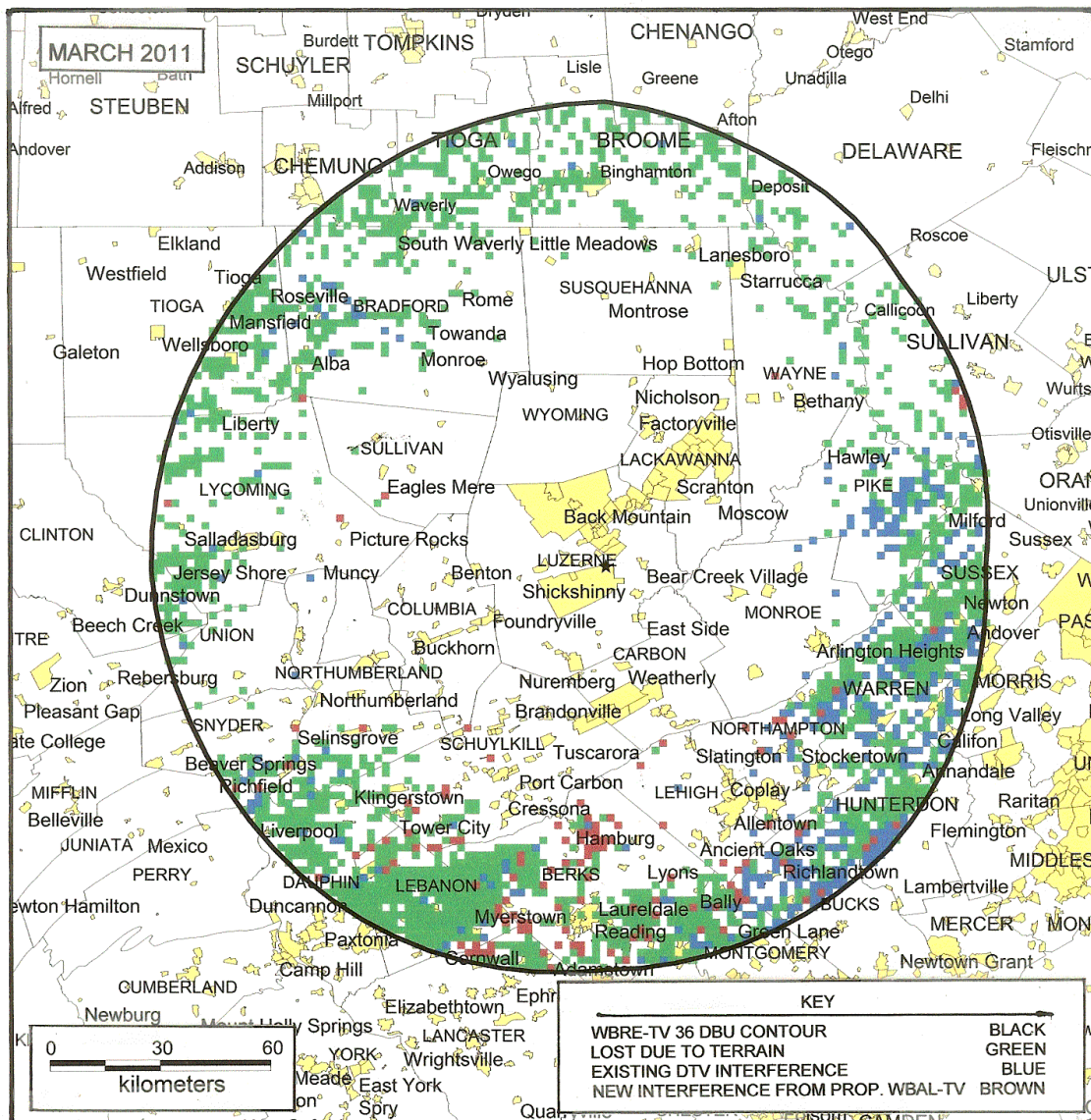
I declare under penalty of perjury that the foregoing is true and correct. Executed on March 22, 2011.



Bernard R. Segal, P. E.

Maryland Registration #25811

FIGURE 1

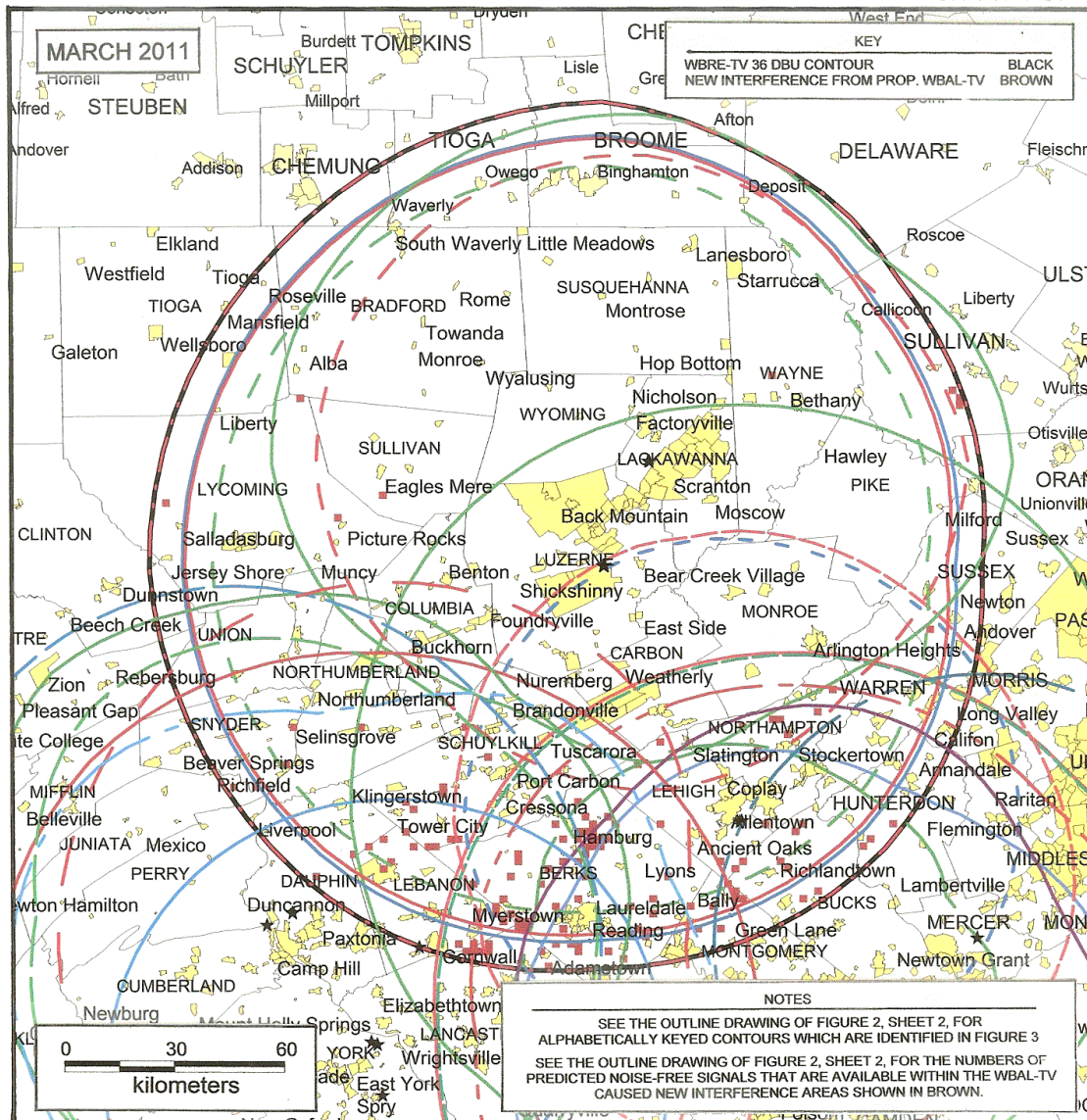


# WBRE-TV, WILKES-BARRE, PA INTERFERENCE PREDICTION STUDY

WBAL HEARST TELEVISION INC.  
STATION WBAL-TV, BALTIMORE, MARYLAND  
CHANNEL 11 26.6 KW 299 METERS

Bernard R. Segal, P. E. Consulting Engineer

FIGURE 2  
SHEET 1 OF 2

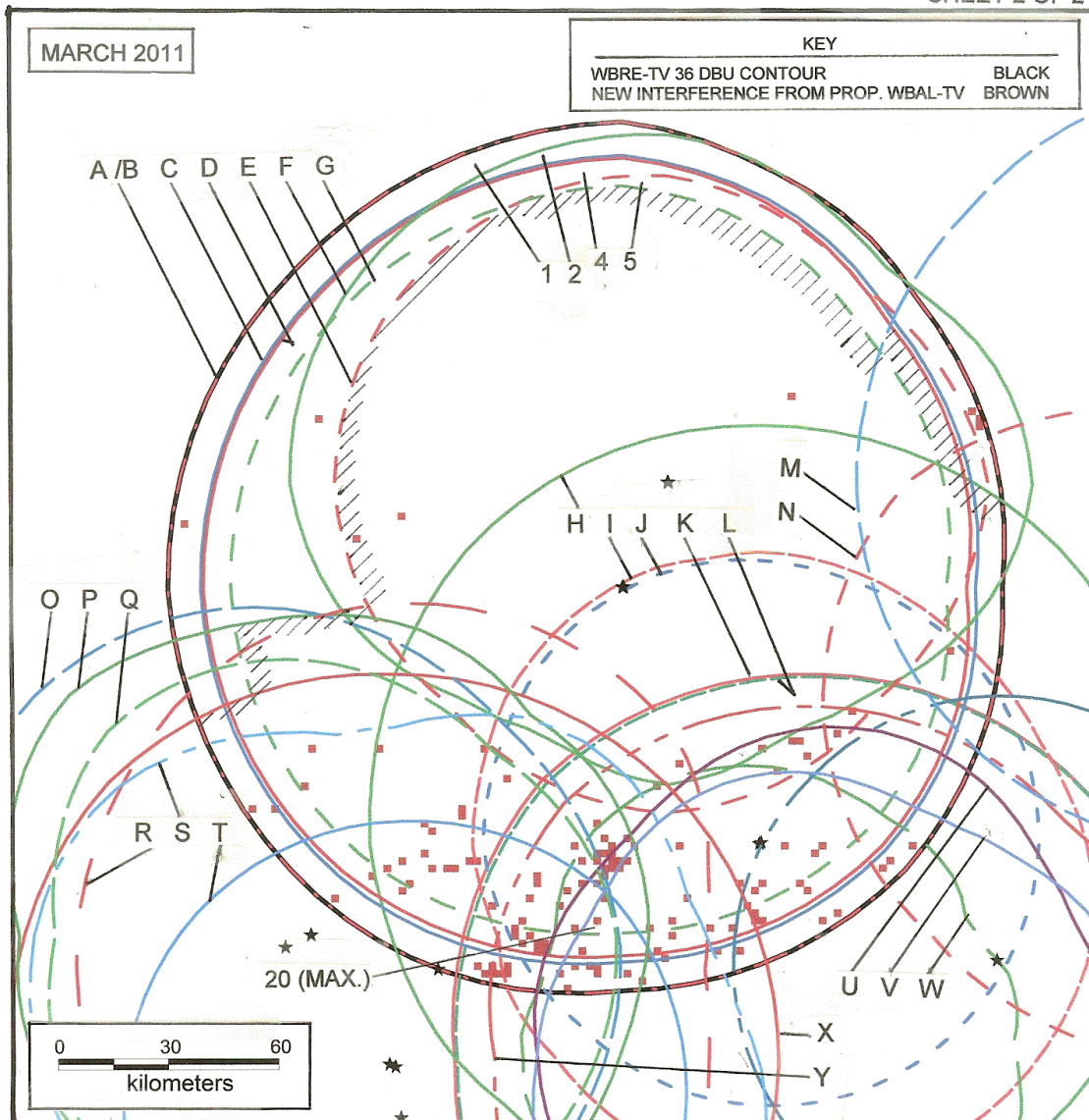


**AVAILABLE DTV SERVICES TO PREDICTED  
WBAL-TV CAUSED NEW INTERFERENCE AREAS  
WITHIN WBRE-TV 36 DBU CONTOUR**

**WBAL HEARST TELEVISION INC.  
STATION WBAL-TV, BALTIMORE, MARYLAND  
CHANNEL 11 26.6 KW 299 METERS**

**Bernard R. Segal, P. E. Consulting Engineer**

FIGURE 2  
SHEET 2 OF 2



NUMERALS SIGNIFY NUMBER OF OTHER SERVICES, EXCLUDING WBRE-TV.  
HACHURING DENOTES BOUNDARY FOR MORE THAN FIVE SERVICES  
SEE FIGURE 3 FOR IDENTIFICATIONS OF STATIONS KEYED TO THE LETTERS

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FIGURE 3

IDENTIFICATIONS OF  
FIGURE 2 STATIONS

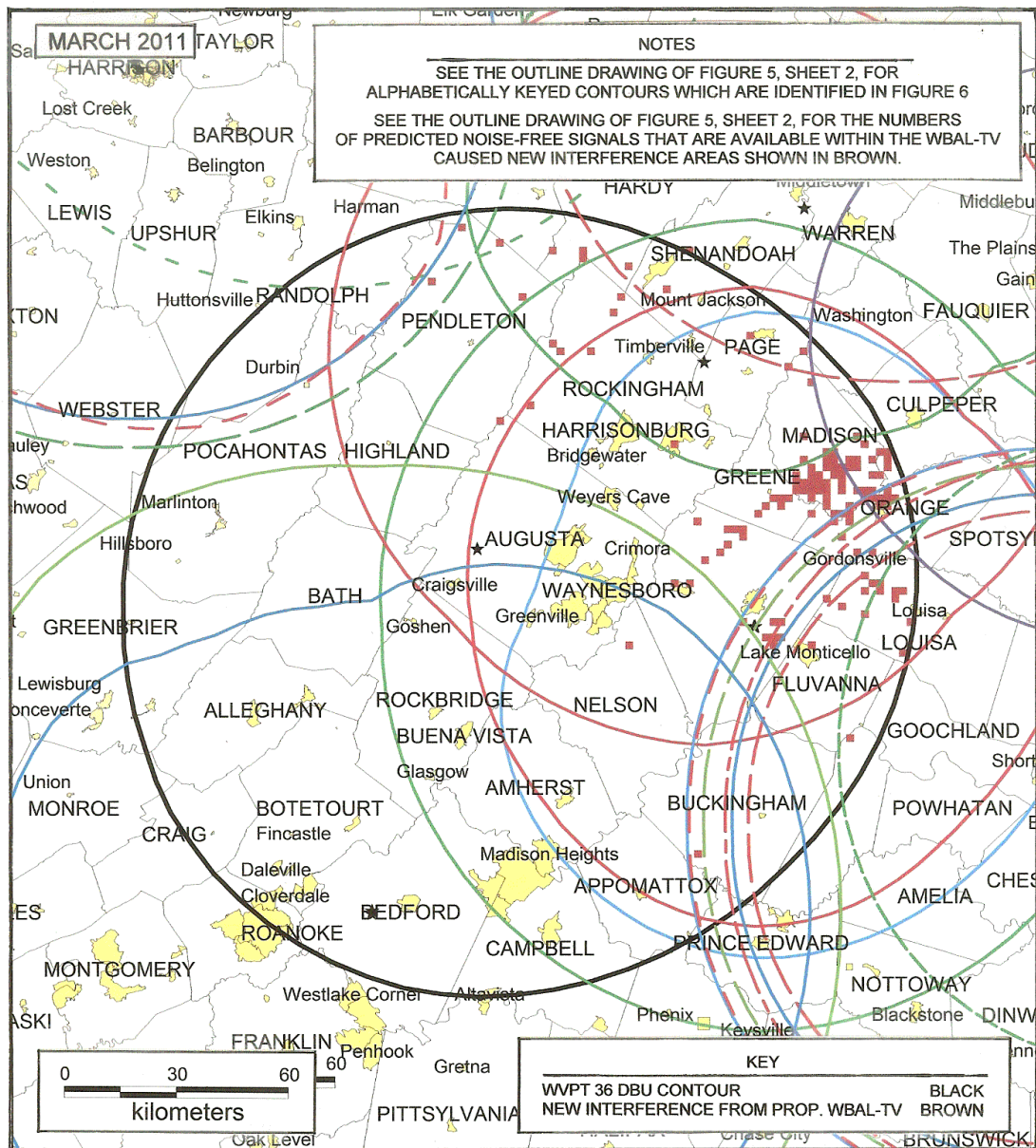
<u>MAP LETTER</u>	<u>STATION AND FACILITIES</u>	<u>NETWORK</u>
A	WBRE-TV, WILKES-BARRE, PA, CH. 11, 30 KW, 471 M	NBC
B	WYOU, SCRANTON, PA, CH. 13, 30 KW, 471 M	CBS
C	WNEP-TV, SCRANTON, PA, CH. 50, 500KW, 517 M	ABC
D	WOLF-TV, HAZLETON, PA, CH. 45, 420 KW 488 M	FOX
E	WSWB, SCRANTON, PA, CH. 31, 100KW, 352 M	
F	WQPX-TV, SCRANTON, PA, CH. 32, 528 KW, 354 M	
G	WVIA-TV, SCRANTON, PA, CH.41, 171 KW, 510 M	PBS
H	WBPH-TV, BETHLEHEM, PA, CH. 9, 80.6 KW, 302 M	
I	WFMZ-TV, ALLENTOWN, PA, CH. 46, 800KW, 331 M	
J	WLVT-TV, ALLENTOWN, PA, CH. 39, 52 KW, 295 M	PBS
K	KYW-TV, PHILADELPHIA, PA, CH. 26, 790 KW, 375 M	CBS
L	WCAU-TV, PHILADELPHIA, PA, CH. 34, 700KW, 400 M	NBC
M	WTBY-TV, POUGHKEEPSIE, NY, CH. 27, 1000KW, 358 M	
N	WMBC-TV, NEWTON, NJ, CH. 18, 1000 KW, 250 M	
O	WHTM-TV, HARRISBURG, PA, CH. 10, 16.2 KW, 311 M	ABC
P	WHP-TV, HARRISBURG, PA, CH. 21, 450 KW, 369 M	CBS
Q	WITF-TV, HARRISBURG, PA, CH. 36, 50 KW, 411 M	PBS
R	WLYH-TV, LANCASTER, PA, CH. 23, 500 KW, 381 M	
S	WPMT, YORK, PA, CH. 47, 933KW, 385 M	FOX
T	WGCB-TV, RED LION, PA, CH. 30, 500KW, 174 M	
U	WPPX-TV, WILMINGTON, DE, CH. 31, 200KW, 374 M	
V	WGTW-TV, BURLINGTON, NJ, CH. 27, 160 KW, 154 M	
W	WTVE, READING, PA, CH. 25, 126 KW, 378 M	
X	WGAL, LANCASTER, PA, CH. 8, 14.1 KW, 419M	NBC
Y	WPHL-TV, PHILADELPHIA, PA, CH. 17, 645 KW, 324 M	

[illegible]

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STATION WBAL-TV, BALTIMORE, MARYLAND  
CHANNEL 11 26.6 KW 299 METERS

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FIGURE 5  
SHEET 1 OF 2

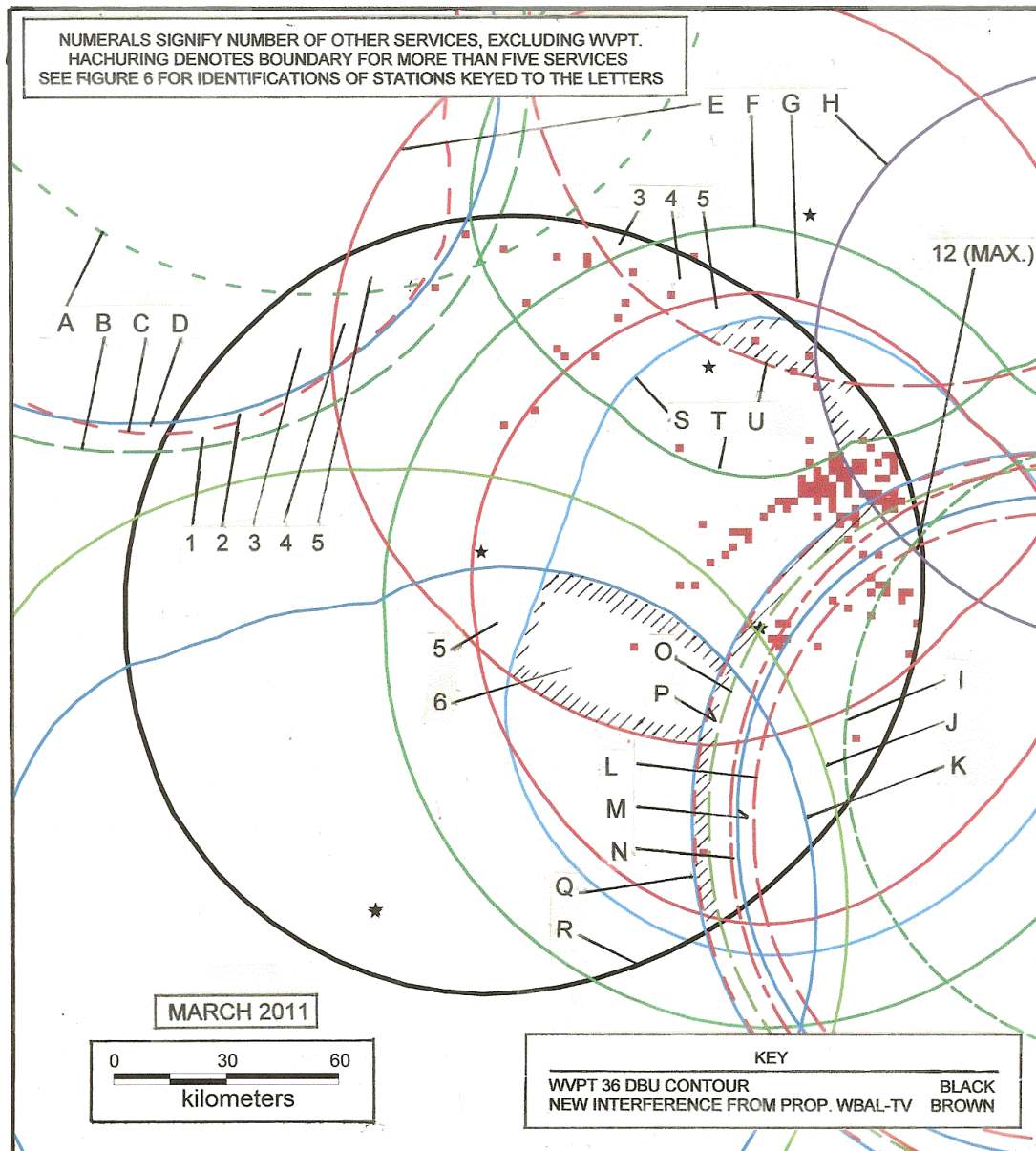


**AVAILABLE DTV SERVICES TO PREDICTED  
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WITHIN WVPT 36 DBU CONTOUR**

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CHANNEL 11 26.6 KW 299 METERS

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FIGURE 5  
SHEET 2 OF 2



AVAILABLE DTV SERVICES TO PREDICTED  
WBAL-TV CAUSED NEW INTERFERENCE AREAS  
WITHIN WVPT 36 DBU CONTOUR

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FIGURE 6

IDENTIFICATIONS OF  
FIGURE 5 STATIONS

<u>MAP LETTER</u>	<u>STATION AND FACILITIES</u>	<u>NETWORK</u>
A	WNPB-TV, MORGANTOWN, WV, CH.33, 615 KW,464 M	PBS
B	WDTV, WESTON, WV, CH. 5, 10 KW, 240 M	CBS
C	WVFX, CLARKSBURG, WV, CH. 10, 30 KW, 235 M	FOX
D	WBOY-TV, CLARKSBURG, WV, CH. 12, 12.3 KW, 262 M	ABC/NBC
E	WHSV-TV, HARRISONBURG, VA, CH. 49, 65 KW, 639 M	FOX
F	WVI-TV, CHARLOTTESVILLE, VA, CH. 32, 1000 KW, 368 M	NBC
G	WHTJ, CHARLOTTESVILLE, VA, CH. 46, 165 KW, 332 M	PBS
H	WNVTV, GOLDVEIN, VA, CH. 30, 160KW, 229 M	
I	WUPV, ASHLAND, VA, CH. 47, 1000 KW, 249 M	
J	WSET-TV, LYNCHBURG, VA, CH. 13, 28.7 KW, 625 M	ABC
K	WWCW, LYNCHBURG, VA, CH. 20, 916 KW, 500M	FOX
L	WCVW, RICHMOND, VA, CH. 44, 112 KW, 328M	PBS
M	WCVE-TV, RICHMOND, VA, CH. 42, 160 KW, 346 M	PBS
N	WWBT, RICHMOND, VA, CH. 12, 26 KW, 242 M	NBC
O	WTVR-TV, RICHMOND, VA, CH. 25, 410 KW, 347 M	CBS
P	WRLH-TV, RICHMOND, VA, CH. 26, 800KW, 328 M	FOX
Q	WRIC-TV, PETERSBURG, VA, CH. 22, 850 KW, 328 M	ABC
R	WVPT, STAUNTON, VA, CH. 11, 10 KW, 680 M	PBS
S	WCAV, CHARLOTTESVILLE, VA, CH. 19, 155KW, 326 M	CBS
T	WVPY, FRONT ROYAL, VA, CH. 21, 100 KW, 400M	PBS
U	WWPX-TV, MARTINSBURG, WV, CH. 12, 23 KW, 314 M	



Proposal Number **DCA-7989**  
Date **16-Jul-98**  
Call Letters **WBAL**  
Location **Baltimore, MD**  
Customer  
Antenna Type **TW-9B11-R (S)**

FIGURE 7  
Channel **11**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>9.00 ( 9.54 dB )</b>	Beam Tilt	<b>0.75 deg</b>
RMS Gain at Horizontal	<b>8.60 ( 9.34 dB )</b>	Frequency	<b>201.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>19W090075-90</b>

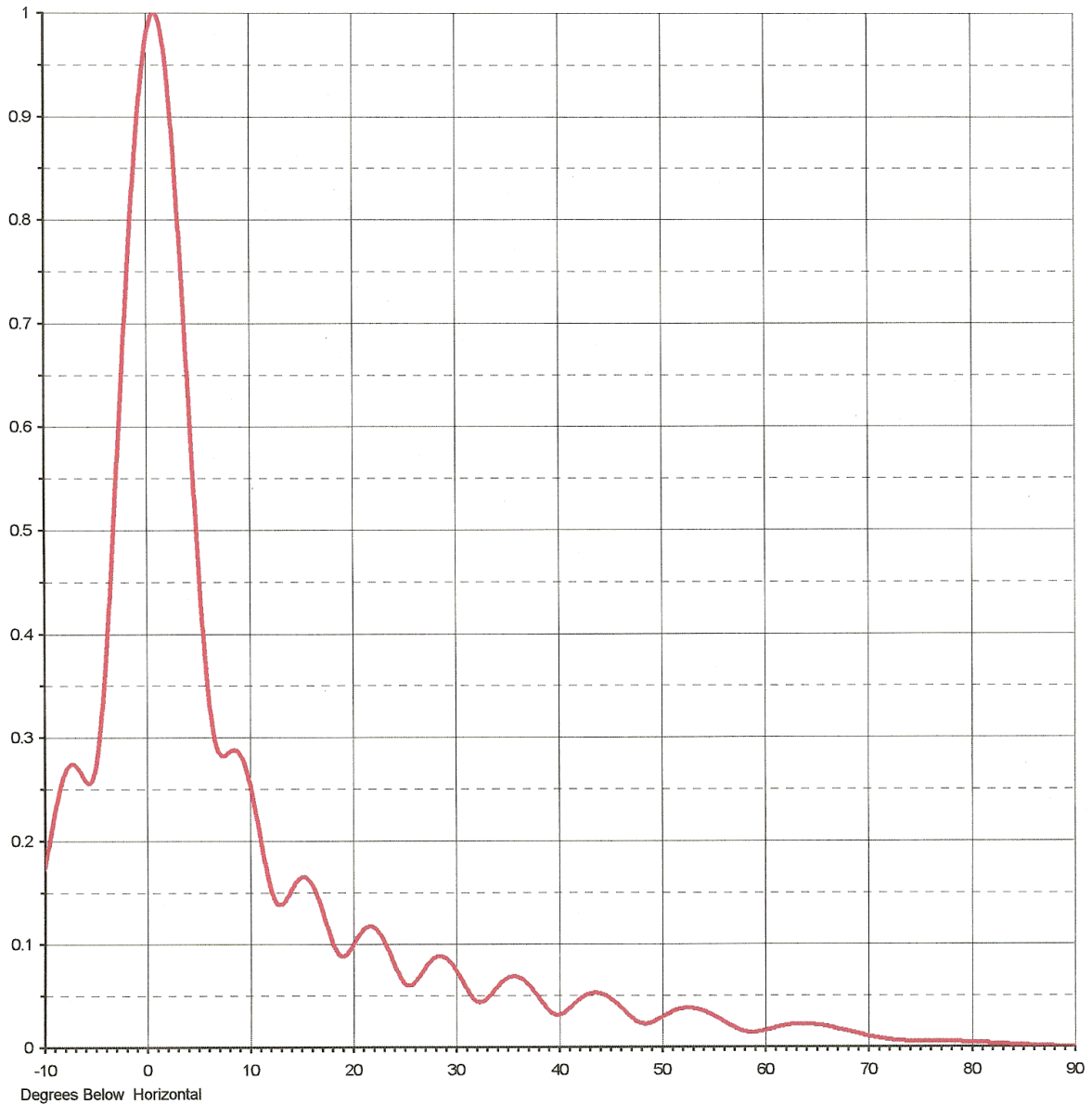




FIGURE 8

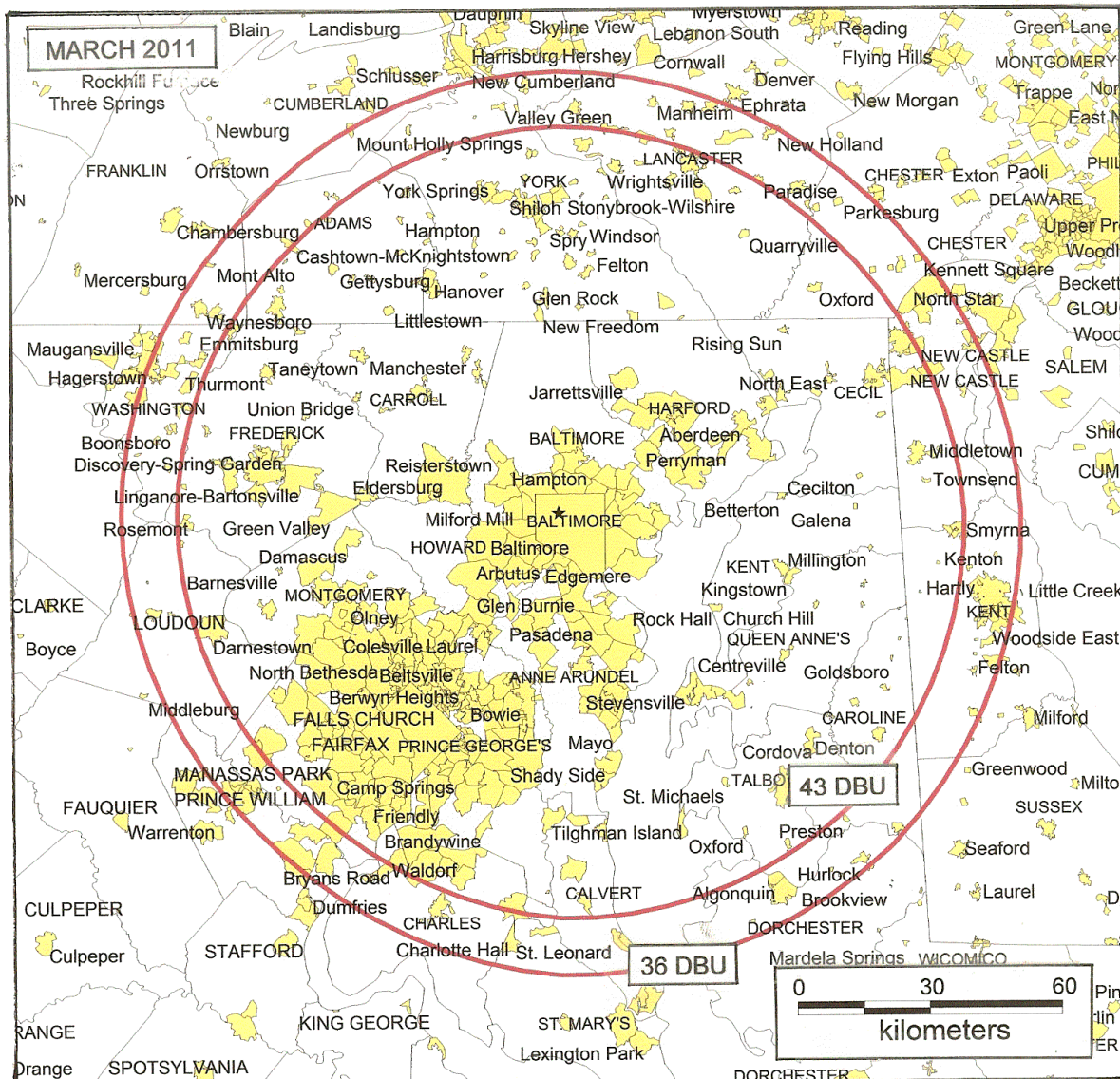
Proposal Number **DCA-7989**  
 Date **16-Jul-98**  
 Call Letters **WBAL** Channel **11**  
 Location **Baltimore, MD**  
 Customer  
 Antenna Type **TW-9B11-R (S)**

### TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **19W090075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.173	2.4	0.900	10.6	0.232	30.5	0.068	51.0	0.034	71.5	0.008
-9.5	0.200	2.6	0.875	10.8	0.221	31.0	0.059	51.5	0.036	72.0	0.007
-9.0	0.226	2.8	0.847	11.0	0.210	31.5	0.051	52.0	0.037	72.5	0.006
-8.5	0.249	3.0	0.818	11.5	0.183	32.0	0.045	52.5	0.038	73.0	0.006
-8.0	0.265	3.2	0.787	12.0	0.159	32.5	0.044	53.0	0.038	73.5	0.006
-7.5	0.273	3.4	0.754	12.5	0.143	33.0	0.046	53.5	0.037	74.0	0.005
-7.0	0.273	3.6	0.721	13.0	0.138	33.5	0.051	54.0	0.035	74.5	0.005
-6.5	0.267	3.8	0.686	13.5	0.141	34.0	0.057	54.5	0.033	75.0	0.005
-6.0	0.258	4.0	0.651	14.0	0.150	34.5	0.063	55.0	0.031	75.5	0.005
-5.5	0.256	4.2	0.615	14.5	0.159	35.0	0.066	55.5	0.028	76.0	0.005
-5.0	0.270	4.4	0.580	15.0	0.164	35.5	0.068	56.0	0.025	76.5	0.005
-4.5	0.308	4.6	0.545	15.5	0.165	36.0	0.068	56.5	0.022	77.0	0.005
-4.0	0.369	4.8	0.510	16.0	0.160	36.5	0.066	57.0	0.020	77.5	0.005
-3.5	0.448	5.0	0.477	16.5	0.150	37.0	0.062	57.5	0.017	78.0	0.005
-3.0	0.536	5.2	0.445	17.0	0.136	37.5	0.057	58.0	0.015	78.5	0.005
-2.8	0.573	5.4	0.416	17.5	0.120	38.0	0.050	58.5	0.014	79.0	0.005
-2.6	0.610	5.6	0.388	18.0	0.105	38.5	0.043	59.0	0.014	79.5	0.004
-2.4	0.647	5.8	0.364	18.5	0.093	39.0	0.037	59.5	0.015	80.0	0.004
-2.2	0.684	6.0	0.343	19.0	0.088	39.5	0.033	60.0	0.016	80.5	0.004
-2.0	0.719	6.2	0.324	19.5	0.090	40.0	0.031	60.5	0.017	81.0	0.004
-1.8	0.754	6.4	0.310	20.0	0.097	40.5	0.033	61.0	0.018	81.5	0.004
-1.6	0.787	6.6	0.298	20.5	0.106	41.0	0.037	61.5	0.020	82.0	0.003
-1.4	0.819	6.8	0.291	21.0	0.112	41.5	0.041	62.0	0.021	82.5	0.003
-1.2	0.848	7.0	0.285	21.5	0.116	42.0	0.046	62.5	0.021	83.0	0.003
-1.0	0.876	7.2	0.283	22.0	0.117	42.5	0.049	63.0	0.022	83.5	0.003
-0.8	0.901	7.4	0.282	22.5	0.113	43.0	0.051	63.5	0.022	84.0	0.002
-0.6	0.924	7.6	0.282	23.0	0.105	43.5	0.053	64.0	0.022	84.5	0.002
-0.4	0.944	7.8	0.284	23.5	0.095	44.0	0.052	64.5	0.022	85.0	0.002
-0.2	0.961	8.0	0.285	24.0	0.083	44.5	0.051	65.0	0.021	85.5	0.002
0.0	0.975	8.2	0.287	24.5	0.072	45.0	0.048	65.5	0.021	86.0	0.001
0.2	0.986	8.4	0.287	25.0	0.063	45.5	0.044	66.0	0.020	86.5	0.001
0.4	0.994	8.6	0.287	25.5	0.060	46.0	0.040	66.5	0.019	87.0	0.001
0.6	0.999	8.8	0.287	26.0	0.062	46.5	0.035	67.0	0.018	87.5	0.001
0.8	1.000	9.0	0.284	26.5	0.068	47.0	0.030	67.5	0.017	88.0	0.000
1.0	0.998	9.2	0.281	27.0	0.075	47.5	0.026	68.0	0.015	88.5	0.000
1.2	0.993	9.4	0.277	27.5	0.082	48.0	0.023	68.5	0.014	89.0	0.000
1.4	0.985	9.6	0.271	28.0	0.086	48.5	0.022	69.0	0.013	89.5	0.000
1.6	0.974	9.8	0.268	28.5	0.088	49.0	0.023	69.5	0.012	90.0	0.000
1.8	0.959	10.0	0.260	29.0	0.087	49.5	0.026	70.0	0.011		
2.0	0.942	10.2	0.252	29.5	0.083	50.0	0.028	70.5	0.010		
2.2	0.922	10.4	0.242	30.0	0.076	50.5	0.031	71.0	0.009		

FIGURE 9



### CALCULATED CONTOURS

WBAL HEARST TELEVISION INC.  
STATION WBAL-TV, BALTIMORE, MARYLAND  
CHANNEL 11 26.6 KW 299 METERS

Bernard R. Segal, P. E. Consulting Engineer

BERNARD R. SEGAL, P. E.  
CONSULTING ENGINEER  
KENSINGTON, MARYLAND

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FIGURE 10

ELEVATION DATA AND  
DISTANCES TO SERVICE CONTOURS  
PROPOSED WBAL-TV, BALTIMORE, MARYLAND  
CH. 11 26.6 KW 299 METERS

NAD '27 Site Coordinates: 39° 20' 05" N; 76° 39' 03" W  
Antenna Radiation Center: 383 meters AMSL

Azimuth (Deg. True)	HAAT (meters)	Depression Angle To Radio Horizon (degrees)	Distance To	
			43 dBu Contour (km)	36 dBu Contour (km)
0	284	0.5	86.7	99.1
10	269	0.5	86.1	98.6
20	274	0.5	86.3	98.7
30	281	0.5	86.6	99.0
40	269	0.5	86.1	98.6
50	273	0.5	86.3	98.7
60	288	0.5	86.9	99.3
70	307	0.5	88.0	100.5
80	324	0.5	89.2	101.9
90	344	0.5	90.7	103.5
100	356	0.5	91.6	104.4
110	362	0.5	92.1	104.9
120	362	0.5	92.1	104.9
130	370	0.5	92.7	105.5
140	377	0.5	93.2	106.0
150	374	0.5	92.9	105.8
160	367	0.5	92.4	105.2
170	360	0.5	91.9	104.7
180	352	0.5	91.3	104.1
190	347	0.5	90.9	103.7
200	347	0.5	90.9	103.7
210	321	0.5	89.0	101.6
220	288	0.5	86.9	99.3
230	272	0.5	86.2	98.7
240	273	0.5	86.3	98.7
250	269	0.5	86.1	98.6
260	272	0.5	86.2	98.7
270	258	0.4	85.6	98.1
280	250	0.4	85.2	97.7
290	238	0.4	84.5	96.9
300	242	0.4	84.8	97.2
310	237	0.4	84.5	96.9
320	237	0.4	84.5	96.9
330	242	0.4	84.8	97.2
340	255	0.4	85.5	98.0
350	261	0.4	85.8	98.3

Note: In each direction, the relative field at the depression angle to the radio horizon exceeded 90% of the maximum in the vertical plane. Therefore, the maximum ERP was used to determine the contour distance.

