Lechman & Johnson
Lanham, Maryland

Page 1
May 11, 1990

Interference contours based on FCC F(50,10) curves

Title: ALLENTOWN,PA
Channel: 207 C/R 396.4 meters (1300.5 feet) A.M.S.L.

Latitude: 40-33-54
Longitude: 75-26-26

Bearing (degrees)	HAAT (meters) (feet)	ERP (kiloWatts) (dBk)	80 dBu (10 mV/m) contour	54 dBu (.50 mV/m) contour	40 dBu (.10 mV/m) contour
.0	276.3	.124	> 5.2 km	27.0 km	57.6 km
	906.5	-9.06	> 3.2 mi	16.8 mi	35.8 mi
10.0	274.6	.121	> 5.2 km	26.8 km	57.2 km
	900.9	-9.16	> 3.2 mi	16.7 mi	35.6 mi

Note: Contour(s) prefixed by ">" computed using F(50,50) curves.

Lechman & Johnson
Lanham, Maryland

Page 2
May 11, 1990

Interference contours based on FCC F(50,10) curves

Title: ALLENTOWN,PA
Channel: 207 C/R 396.4 meters (1300.5 feet) A.M.S.L.

Latitude: 40-33-54
Longitude: 75-26-26

Bearing (degrees)	HAAT (meters) (feet)	ERP (kiloWatts) (dBk)	80 dBu (10 mV/m) contour	54 dBu (.50 mV/m) contour	40 dBu (.10 mV/m) contour
* 140.0	235.9	.031	> 3.1 km	17.4 km	39.6 km
	774.0	-15.1	> 1.9 mi	10.8 mi	24.6 mi
150.0	227.3	.031	> 3.1 km	17.0 km	38.9 km
	745.7	-15.1	> 1.9 mi	10.6 mi	24.1 mi
* 160.0	216.5	.035	> 3.1 km	17.2 km	39.2 km
	710.3	-14.5	> 2.0 mi	10.7 mi	24.3 mi
* 170.0	202.7	.045	> 3.3 km	17.8 km	40.0 km
	665.0	-13.5	> 2.1 mi	11.0 mi	24.8 mi
180.0	204.4	.061	> 3.7 km	19.5 km	43.1 km
	670.6	-12.2	> 2.3 mi	12.1 mi	26.8 mi
* 190.0	212.3	.085	> 4.2 km	21.8 km	47.5 km
	696.5	-10.7	> 2.6 mi	13.5 mi	29.5 mi
* 200.0	210.6	.111	> 4.5 km	23.2 km	50.1 km
	690.9	-9.56	> 2.8 mi	14.4 mi	31.2 mi
* 210.0	207.6	.131	> 4.7 km	24.0 km	51.6 km
	681.1	-8.83	> 2.9 mi	14.9 mi	32.1 mi
* 220.0	183.5	.145	> 4.7 km	23.2 km	49.9 km
	602.0	-8.40	> 2.9 mi	14.4 mi	31.0 mi
225.0	182.1	.148	> 4.7 km	23.2 km	50.0 km
	597.4	-8.29	> 2.9 mi	14.4 mi	31.1 mi
* 230.0	192.6	.150	> 4.8 km	23.9 km	51.4 km
	631.9	-8.24	> 3.0 mi	14.9 mi	31.9 mi
* 240.0	256.0	.147	> 5.4 km	27.2 km	57.7 km
	839.9	-8.32	> 3.3 mi	16.9 mi	35.9 mi
* 250.0	273.8	.140	> 5.4 km	27.7 km	58.8 km
	898.3	-8.53	> 3.4 mi	17.2 mi	36.5 mi
* 260.0	275.0	.130	> 5.3 km	27.3 km	58.1 km
	902.2	-8.85	> 3.3 mi	17.0 mi	36.1 mi
270.0	273.9	.124	> 5.2 km	26.9 km	57.4 km
	898.6	-9.08	> 3.2 mi	16.7 mi	35.7 mi
* 280.0	270.9	.121	> 5.1 km	26.7 km	56.9 km
	888.8	-9.16	> 3.2 mi	16.6 mi	35.4 mi

Note: Contour(s) prefixed by ">" computed using F(50,50) curves.

TABLE IV

FM ALLOCATION STUDY

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A **0.15 kW(Max) DA** **245 Meters**

Channel 207A
New Application, 891019MF
Allentown, Pennsylvania
0.12 kW ERP/245 Meters EAH
40° 33' 54" N/75° 26' 26" W

Bearing °True	EAH Meters	ERP (kW)	Predicted Contours (km) 60 dBu 2 /	40 dBu 3 /
All	245	0.12	17.0	54.5

Channel 207A, WRDV
Apc., BPED-880422MA
Warminister, Pennsylvania
0.10 kW ERP/36 m EAH
40° 12' 19 N/75° 06' 27 W

Bearing °True	EAH Meters	ERP (kW)	Predicted Contours (km) 60 dBu 1 /	40 dBu 3 /
0	18.8	0.9	9.9	34.3
45	46.7	0.38	9.9	33.5
90	51.0	0.2	8.8	29.2
135	49.8	0.6	11.5	40.0
180	43.4	1.0	12.1	43.4
225	41.7	1.0	11.8	42.5
270	15.3	1.0	10.2	35.7
315	19.5	1.0	10.2	35.7

TABLE IV
(Continued)

Channel 207A, WRDV
Apc., BPED-880422MA
Warminister, Pennsylvania
0.2 kW ERP/27 m EAH
40° 12' 19" N/75° 06' 27" W

Bearing °True	EAH feet 1 /	ERP (kW)	Predicted Contours (miles) 60 dBu 1 /	40 dBu 3 /
0	16.9	0.2	4.2	13.9
45	123.4	0.2	4.6	15.5
90	132.4	0.2	4.8	16.1
135	143.1	0.2	5.0	16.7
180	106.7	0.2	4.3	14.5
225	122.0	0.2	4.6	15.4

TABLE IV
(Continued)

Channel 206A, WYBF
Radnor Towns, PA
0.70 kW/68 m
40° 03' 22" N/75° 22' 30" W

Bearing °True	EAH Meters 1 /	ERP (kW)	Predicted Contours (km) 60 dBu 2 /	54 dBu 3 /
All	68	0.70	13.73	20.48

Channel 208A
New Application, 900202MC
Bethlehem, Pennsylvania
40° 40' 21" N/75° 19' 27" W

Bearing °True	EAH Meters 1 /	ERP (kW)	Predicted Contours (km) 60 dBu 2 /	54 dBu 3 /
All	20	0.004	2.54	3.53

Channel 205A
New Application, BPED-870514MN
0.10 kW/133 m
Sellersville, Pennsylvania
40° 23' 02" N/75° 21' 02" W

Bearing °True	EAH Meters 1 /	ERP (kW)	Predicted Contours (km) 60 dBu 2 /	80 dBu 3 /
All	133	0.1	11.8	3.58

Channel 209A, WDVR
Delaware Town, NJ
0.01 kW/92 m
40° 30' 37" N/74° 57' 29"

Bearing °True	EAH Meters 1 /	ERP (kW)	Predicted Contours (km) 60 dBu 2 /	80 dBu 3 /
All	92	0.01	4.68	1.57

TABLE IV
(Continued)

1 / Data taken from station records on file with the FCC.

2 / F(50,50) FM propagation curves used.

3 / F(50,10) FM propagation curves used.

TABLE V
(Continued)

Bearing °True	Desired Signal Strength from Channel 6 WPVI (dBu)	U/D Ratio 3 / (dB)	Undesired Signal Strength from Proposed FM (50,10) (dBu)	Directivity Adjustment (dB)
0	64	4.5	68.5	0
45	64	4.5	68.5	0
90	66	3.0	69.0	6
135	67	2.75	69.75	6
180	67	2.75	69.75	6
225	67	2.75	69.75	6
270	64	4.5	68.5	6
315	64	4.5	68.5	0

Bearing °True	FM F(50,10) Interference Signal Strength (dBu)
0	68.5
45	68.5
90	75.0
135	75.75
180	75.75
225	75.75
270	74.5
315	68.5

1 / Data taken from Station records on file with the FCC.

2 / FCC Section 73.333, Figure 1a.

3 / FCC Section 73.599, Figure 1.

MAY 1990

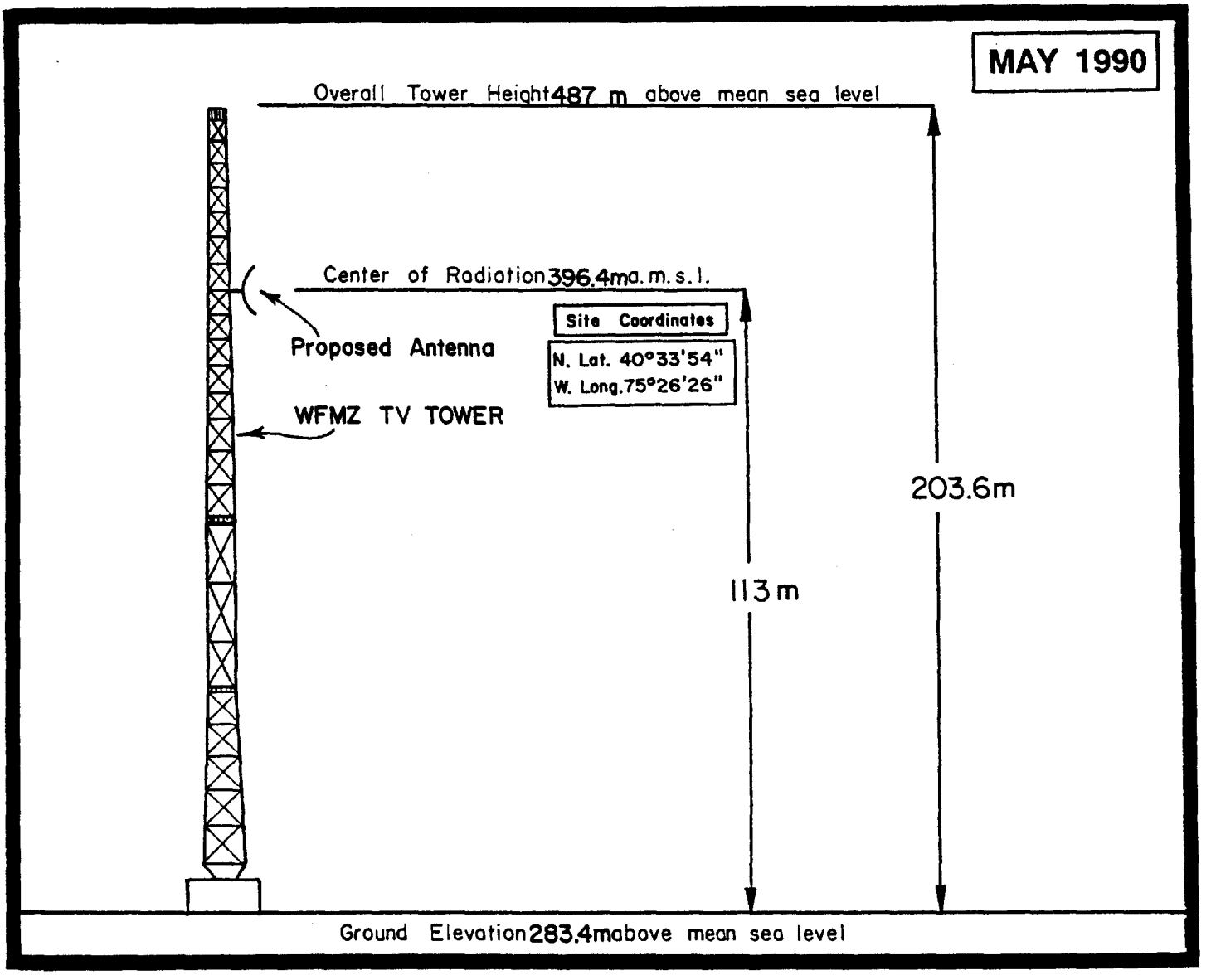


EXHIBIT VB-1

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A 0.15 kW(Max) DA 245 Meters

Prepared By
LECHMAN & JOHNSON, Inc.
TELECOMMUNICATIONS CONSULTANTS
LANHAM, MARYLAND

EXHIBIT VB-2

DIRECTIONAL ANTENNA INFORMATION

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A **0.15 kW(Max) DA** **245 Meters**

It is proposed to install a Harris, Type FMD-3A, three bay FM antenna on the WFMZ(TV) tower. The maximum gain of the proposed antenna as shown by Exhibit VB-

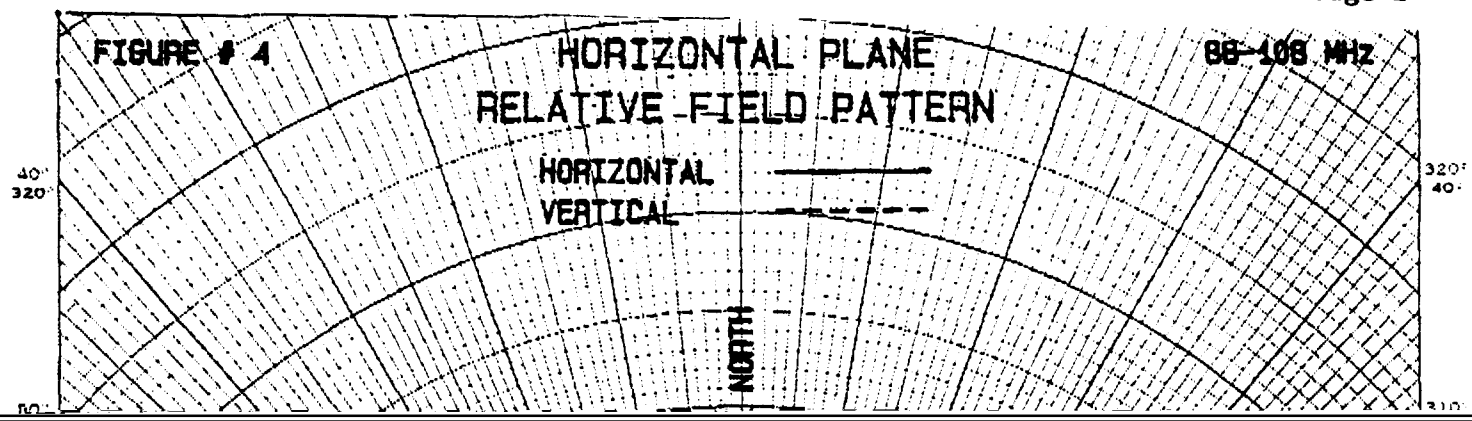


FIGURE # 4
HORIZONTAL PLANE
RELATIVE FIELD PATTERN
88-108 MHz
HORIZONTAL
VERTICAL
NORTH
40°
320°
320°
40°

EXHIBIT VB-2 - Page 4

DIRECTIONAL ANTENNA INFORMATION

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A 0.15 kW(Max) DA 245 Meters

Azimuth	Rel. Fld.	dB	dBk	kW
0	0.910	-0.82	-9.06	0.124
10	0.899	-0.92	-9.16	0.121
20	0.908	-0.84	-9.08	0.124
30	0.932	-0.61	-8.85	0.130
40	0.967	-0.29	-8.53	0.140
45	0.981	-0.17	-8.41	0.144
50	0.991	-0.08	-8.32	0.147
60	1.0	-0.00	-8.24	0.15
70	0.982	-0.16	-8.40	0.145
80	0.935	-0.69	-8.93	0.128
90	0.859	-1.32	-9.56	0.11
100	0.754	-2.46	-10.70	0.085
110	0.636	-3.93	-12.17	0.061
120	0.546	-5.26	-13.5	0.045
130	0.485	-6.29	-14.53	0.035
135	0.465	-6.66	-14.9	0.032
140	0.452	-6.9	-15.14	0.031
150	0.452	-6.9	-15.14	0.031
160	0.485	-6.29	-14.53	0.035
170	0.546	-5.26	-13.5	0.045
180	0.636	-3.93	-12.17	0.061
190	0.754	-2.46	-10.7	0.085
200	0.859	-1.32	-9.56	0.11
210	0.935	-0.59	-8.83	0.131
220	0.982	-0.16	-8.4	0.145
225	0.995	-0.05	-8.29	0.148
230	1.0	0.00	-8.24	0.15
240	0.991	-0.08	-8.32	0.147
250	0.967	-0.29	-8.53	0.140

FIGURE # 4
HORIZONTAL PLANE RELATIVE FIELD & DB LIST
FOR FREQUENCIES 88-108MHz

AZIMUTH	H POL RELATIVE FIELD	H POL DB CHANGE	H POL POWER %	V POL RELATIVE FIELD	V POL DB CHANGE	V POL POWER %	AZIMUTH	H POL RELATIVE FIELD	H POL DB CHANGE	H POL POWER %	V POL RELATIVE FIELD	V POL DB CHANGE	V POL POWER %
0.0	1.000	.00	100.00	.990	-.09	97.97	180.0	.447	-7.00	19.95	.442	-7.09	19.55
5.0	.997	-.03	99.32	.986	-.12	97.18	185.0	.452	-6.90	20.44	.442	-7.09	19.55
10.0	.989	-.10	97.75	.982	-.16	96.38	190.0	.465	-6.66	21.60	.442	-7.09	19.55
15.0	.976	-.21	95.30	.972	-.24	94.52	195.0	.485	-6.29	23.48	.442	-7.09	19.55
20.0	.959	-.36	92.01	.957	-.38	91.63	200.0	.512	-5.82	26.18	.449	-6.96	20.14
25.0	.939	-.55	88.17	.937	-.57	87.76	205.0	.546	-5.26	29.81	.464	-6.66	21.55
30.0	.922	-.70	85.07	.916	-.76	83.98	210.0	.588	-4.62	34.52	.489	-6.22	23.87
35.0	.910	-.82	82.83	.901	-.90	81.26	215.0	.636	-3.93	40.49	.522	-5.65	27.23
40.0	.902	-.89	81.42	.892	-.99	79.55	220.0	.692	-3.19	47.93	.564	-4.98	31.79
45.0	.899	-.92	80.82	.888	-1.03	78.82	225.0	.754	-2.46	56.82	.615	-4.23	37.79
50.0	.902	-.90	81.31	.891	-1.00	79.43	230.0	.810	-1.83	65.59	.675	-3.42	45.50
55.0	.908	-.84	82.46	.899	-.92	80.85	235.0	.859	-1.32	73.75	.743	-2.58	55.20
60.0	.918	-.74	84.29	.912	-.80	83.10	240.0	.900	-.91	81.08	.806	-1.87	65.04
65.0	.932	-.61	86.81	.929	-.64	86.23	245.0	.935	-.59	87.39	.861	-1.30	74.05
70.0	.949	-.45	90.06	.949	-.45	90.06	250.0	.962	-.34	92.54	.905	-.87	81.93
75.0	.967	-.29	93.44	.966	-.30	93.31	255.0	.982	-.16	96.41	.940	-.53	88.44
80.0	.981	-.17	96.14	.978	-.19	95.74	260.0	.995	-.05	98.92	.966	-.30	93.37
85.0	.991	-.08	98.15	.986	-.12	97.29	265.0	1.000	.00	100.00	.983	-.15	96.58
90.0	.997	-.02	99.44	.990	-.09	97.97	270.0	.997	-.02	99.44	.990	-.09	97.97
95.0	1.000	.00	100.00	.983	-.15	96.58	275.0	.991	-.08	98.15	.986	-.12	97.29
100.0	.995	-.05	98.92	.966	-.30	93.37	280.0	.981	-.17	96.14	.978	-.19	95.74
105.0	.982	-.16	96.41	.940	-.53	88.44	285.0	.967	-.29	93.44	.966	-.30	93.31
110.0	.962	-.34	92.54	.905	-.87	81.93	290.0	.949	-.45	90.06	.949	-.45	90.06
115.0	.935	-.59	87.39	.861	-1.30	74.05	295.0	.932	-.61	86.81	.929	-.64	86.23
120.0	.900	-.91	81.08	.806	-1.87	65.04	300.0	.918	-.74	84.29	.912	-.80	83.10
125.0	.859	-1.32	73.75	.743	-2.58	55.20	305.0	.908	-.84	82.46	.899	-.92	80.85
130.0	.810	-1.83	65.59	.675	-3.42	45.50	310.0	.902	-.90	81.31	.891	-1.00	79.43
135.0	.754	-2.46	56.82	.615	-4.23	37.79	315.0	.899	-.92	80.82	.888	-1.03	78.82
140.0	.692	-3.19	47.93	.564	-4.98	31.79	320.0	.902	-.89	81.42	.892	-.99	79.55
145.0	.636	-3.93	40.49	.522	-5.65	27.23	325.0	.910	-.82	82.83	.901	-.90	81.26
150.0	.588	-4.62	34.52	.489	-6.22	23.87	330.0	.922	-.70	85.07	.916	-.76	83.98
155.0	.546	-5.26	29.81	.464	-6.66	21.55	335.0	.939	-.55	88.17	.937	-.57	87.76
160.0	.512	-5.82	26.18	.449	-6.96	20.14	340.0	.959	-.36	92.01	.957	-.38	91.63
165.0	.485	-6.29	23.48	.442	-7.09	19.55	345.0	.976	-.21	95.30	.972	-.24	94.52
170.0	.465	-6.66	21.60	.442	-7.09	19.55	350.0	.989	-.10	97.75	.982	-.16	96.38
175.0	.452	-6.90	20.44	.442	-7.09	19.55	355.0	.997	-.03	99.32	.986	-.12	97.18

MOUNTING STRUCTURE: STEEL POLE
ANTENNA TYPE: FMD HORIZONTAL MAXIMUM RELATIVE FIELD= 1 AZIMUTH 0
HORIZONTAL MINIMUM RELATIVE FIELD= .446683592 AZIMUTH 180
VERTICAL MAXIMUM RELATIVE FIELD= .989778890281 AZIMUTH 0
VERTICAL MIMIMUM RELATIVE FIELD= .442117989996 AZIMUTH 165
HORIZONTAL R.M.S.=.86148 VERTICAL R.M.S.=.82915
ANTENNA ORIENTATION: NORTH 0 DEGREES EAST

FIGURE 2

THREE BAY CIRCULARLY POLARIZED FM TRANSMITTING ANTENNA

NO BEAM TILT, NO NULL FILL

CALCULATED VERTICAL PLANE RELATIVE FIELD PATTERN

ELECTRONICS RESEARCH, INC. SEPTEMBER 1974

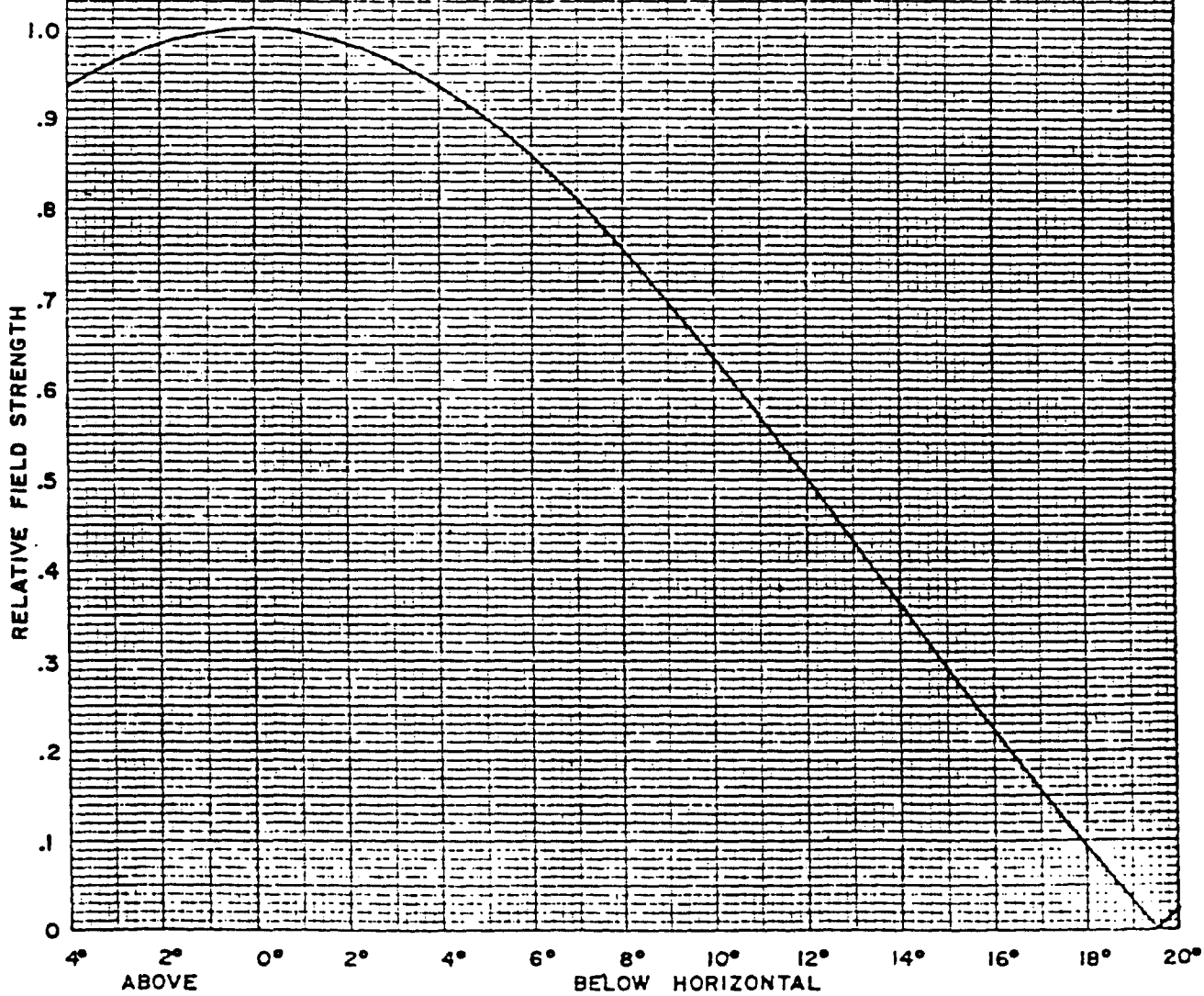


EXHIBIT NO. VB-3

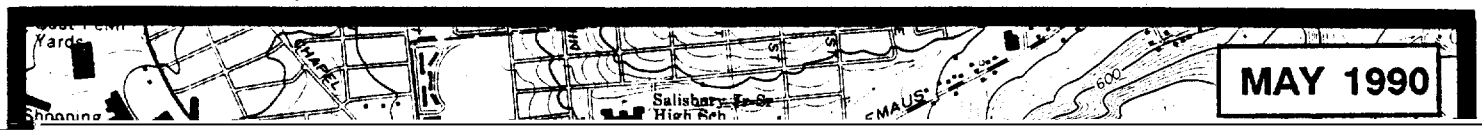
INTERFERENCE STATEMENT

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A 0.15 kW(Max) DA 245 Meters

This FM proposal will be co-located with WFMZ-TV and WFMZ-FM, Allentown, Pennsylvania. The proposed operation is not expected to have any adverse effect upon WFMZ-FM-TV or any other communication facilities located in the general vicinity. The applicant will address all complaints of alleged interference within its blanketing contour as established by Section 73.318 of the Rules and resolve such complaints satisfactory to the complainant provided the device that is malfunctioning is not excluded from the evaluation. The applicant's telecommunications consultant is not aware of any cable headend facilities within the blanketing contour. The proposed operation is not expected to cause receiver-induced intermodulation interference within 10 km of the proposed site.

Should interference occur due to the direct results of the construction of this FM facility, the applicant will take the necessary steps to correct the interference and resolve the issue of interference.

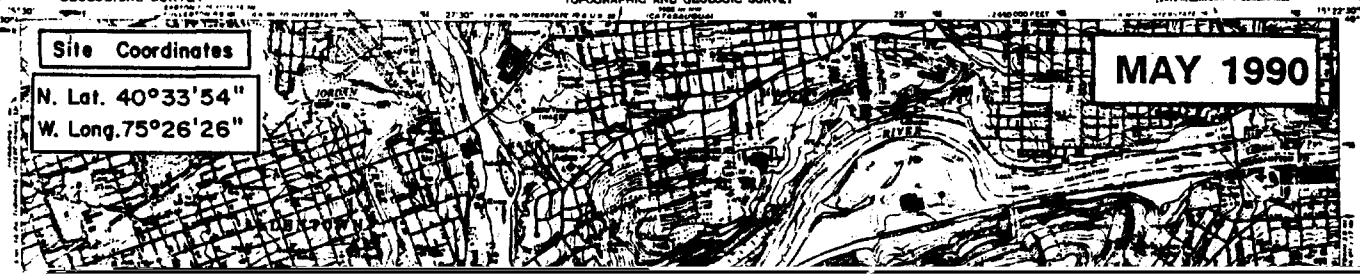


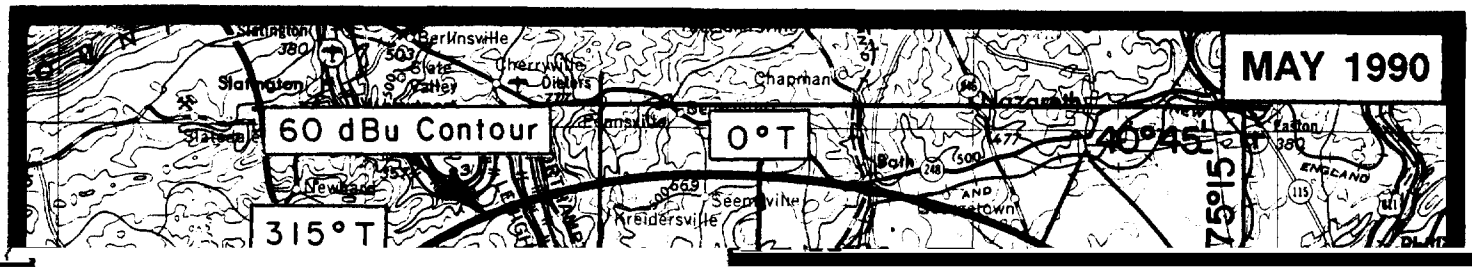
MAY 1990

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

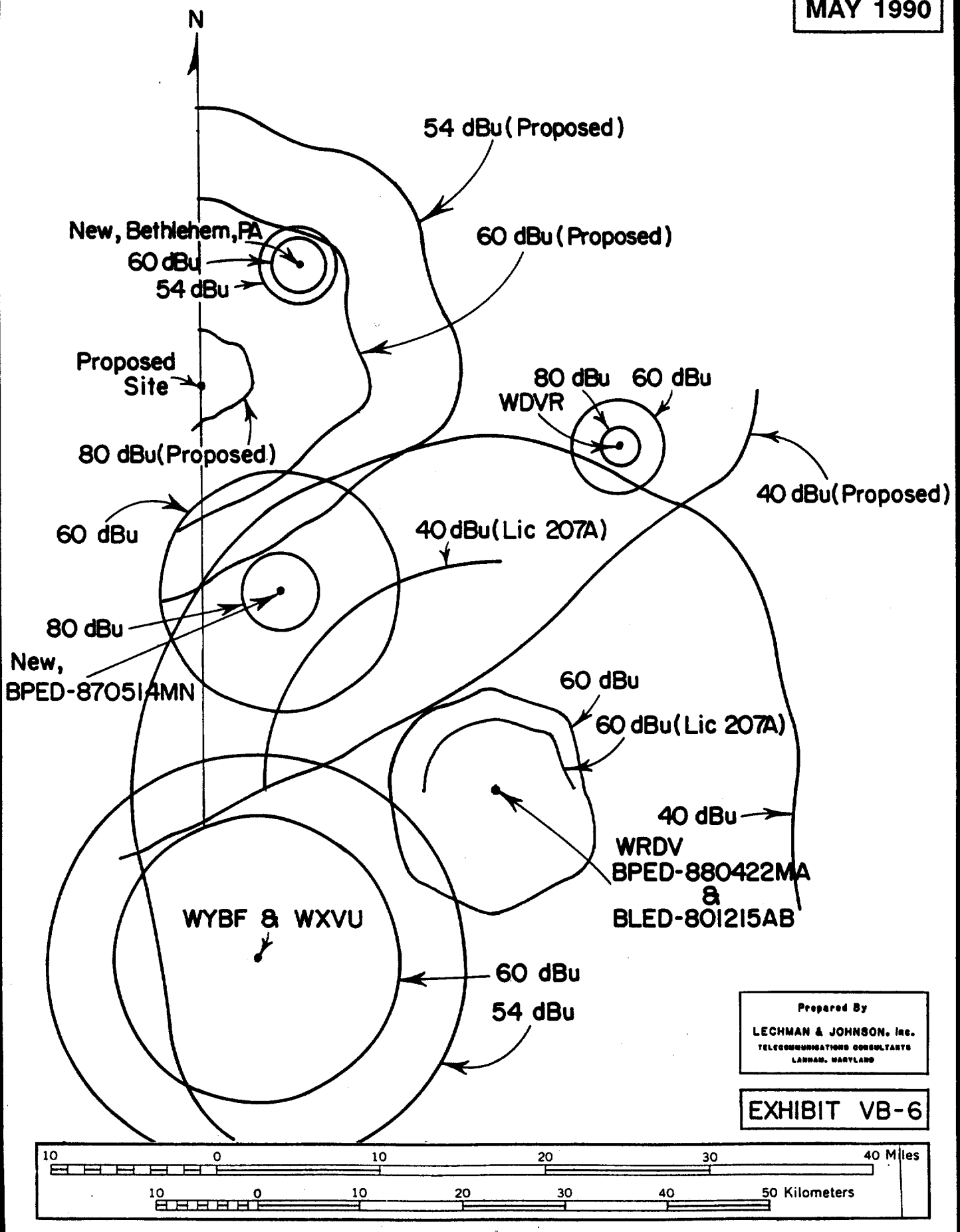
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY

ALLENTOWN EAST QUADRANGLE
PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)




MAY 1990
60 dBu Contour
0°T
315°T
Berlinsville
Cherryville
Chapman
Nazareth
Bath
Easton
Slatington
Slatedale
Newhard
Kreidersville
Seemsville
40°45'
75°15'

MAY 1990



Prepared By
LECHMAN & JOHNSON, Inc.
TELECOMMUNICATIONS CONSULTANTS
LANHAM, MARYLAND

EXHIBIT VB-6

EXHIBIT VB-7A

TV CHANNEL 6 INTERFERENCE STUDY

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

Channel 207A 0.15 kW(Max) DA 245 Meters

The nearest TV Channel 6 station to be evaluated under Section 73.525 of the Rules is WPVI-TV, Philadelphia, Pennsylvania. WPVI-TV is located 60 km at a bearing of 164° True from the proposed FM site as shown on Exhibit VB-7B. The proposed site is outside of WPVI Grade A contour.

The interference area was computed as follows. Eight points were chosen from outside of the Grade A contour and inside of the Grade B contour of WPVI-TV. They are as follows: four points were located on the 64 dBu contour of WPVI-TV referenced to radial bearings 0° T, 45° T, 270° T and 315° T from the proposed FM site; three points were located on the 67 dBu contour of WPVI-TV referenced to radial bearing 225° T, 135°T, 180° T from the proposed FM site; remaining point was located on the 66 dBu contour of WPVI-TV referenced to radial bearing 90° T from the proposed FM

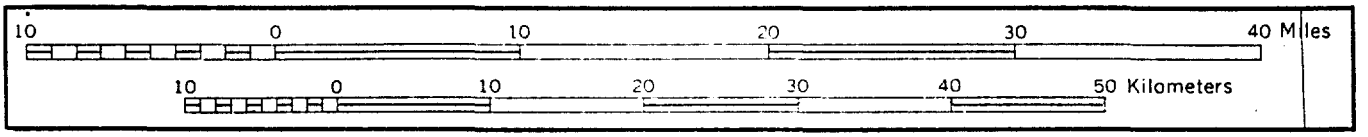
Step 4) The terrain elevation (AMSL) versus distance (miles) graphs (4/3 earth curvature were drawn in reference to nine radials (336°, 338°, 340°, 342°, 344°, 346°, 348°, 350° and 352°) of WPVI-TV site. These graphs are shown in Exhibit VB-7D thru VB-7H.

Step 5) The seventeen points described in Step 3 (A through Q) are located on the terrain profile graphs described in Step 4, and labeled these points with the same letters as shown in Exhibit VB-7D thru Exhibit VB-7H.

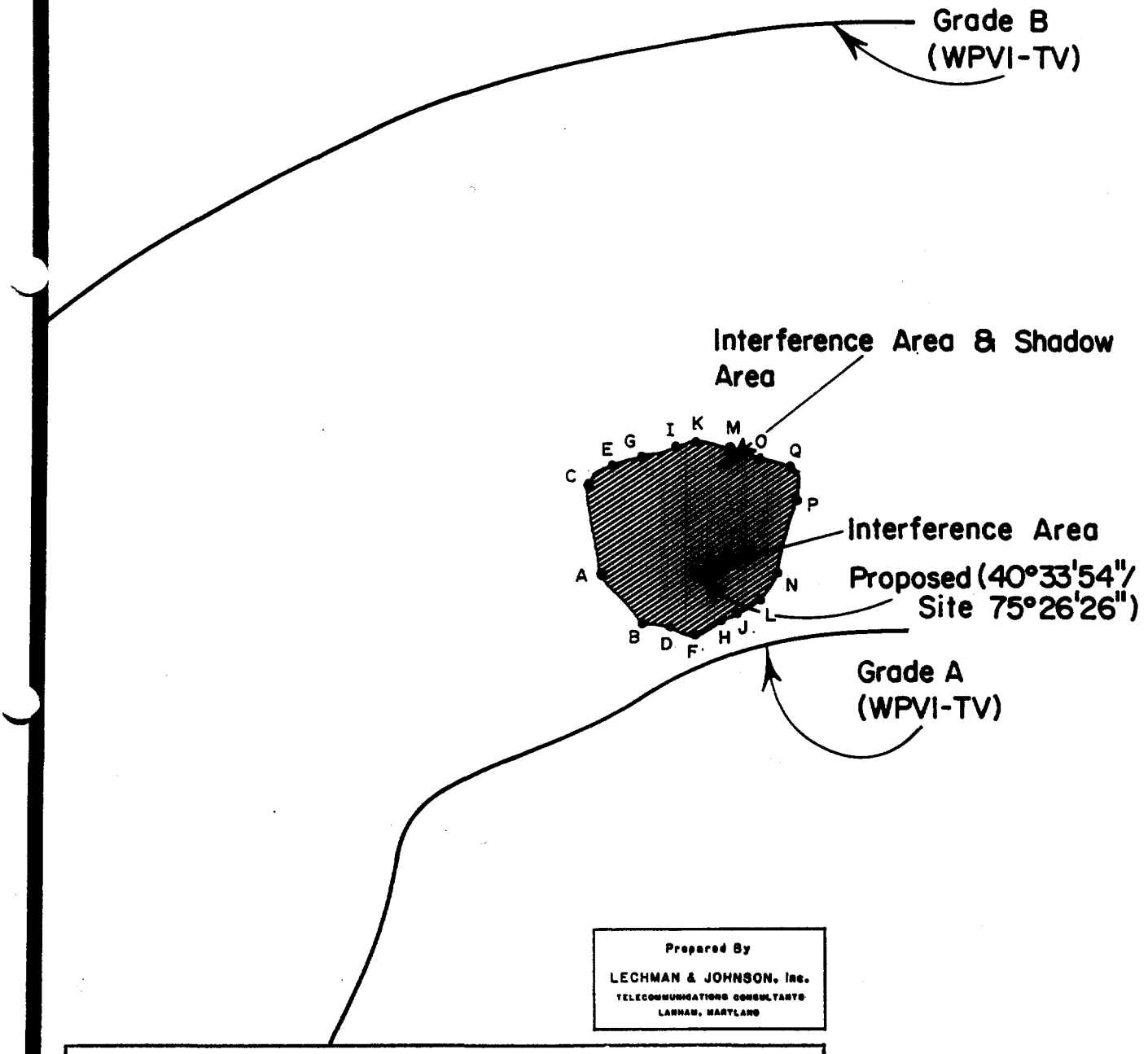
Step 6) The center of radiation above mean sea level of WPVI-TV is 1324. Therefore, from 1324 feet elevation, a straight line was drawn in each terrain profile graph mentioned in Step 5 in order to determine shadow area.

Once the shadow area is determined, we can determine the actual number of people predicted to receive interference. The actual number of people predicted to receive interference is the number of people located within the interference area and not/ in the shadow area. The redefined interference area is shown in Exhibits VB-7B and VB-7C. The area is 0.77 square miles. The number of houses located within the actual interference area (i.e. area within the interference area and not in shadow area) as shown in Exhibits VB-7C is 65. The number of persons per households in Lehigh County, Pennsylvania is 2.63 /1. Therefore, the computed number of people predicted to receive interference is 171. Since the number of people within the actual interference area is less than 3000 people, this instant proposal is in compliance with Section 73.525 of the Rules and Regulations.

/1 Department of Commerce, Census Bureau



MAY 1990



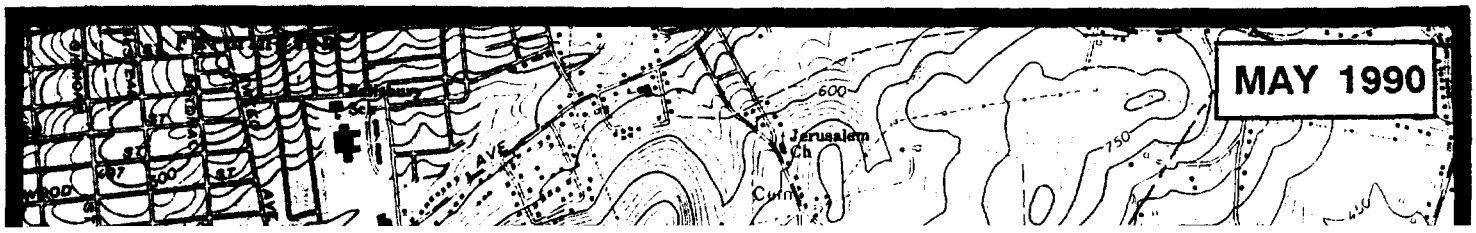
Prepared By
LECHMAN & JOHNSON, Inc.
TELECOMMUNICATIONS CONSULTANTS
LANHAM, MARYLAND

BEACON BROADCASTING CORPORATION
APPLICATION FOR A NEW
NON COMMERCIAL FM STATION
ALLENTOWN, PENNSYLVANIA

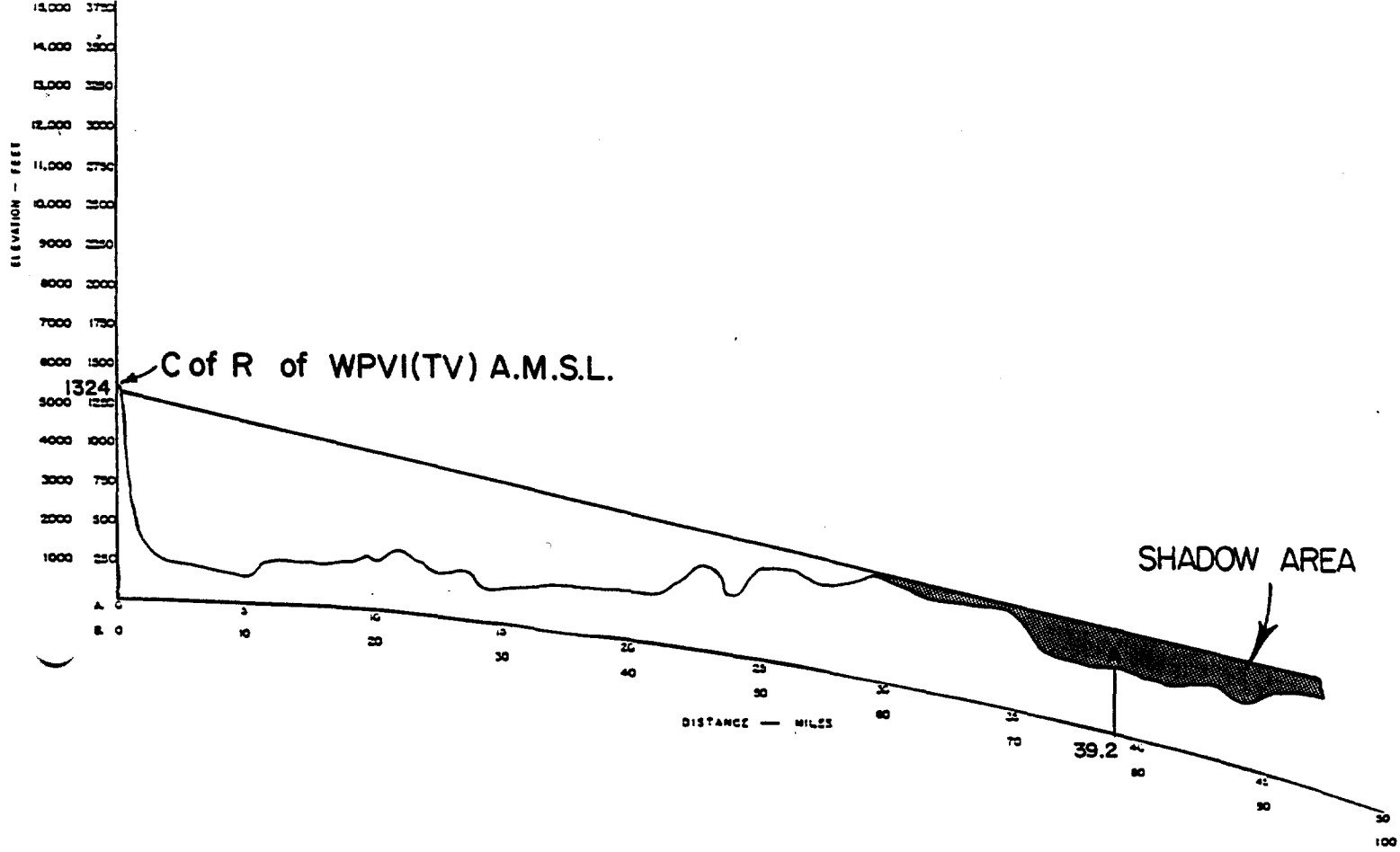
Channel 207A 0.15 kW(Max) DA 245 Meters

WPVI-TV
(40°02'39"/75°14'26")

EXHIBIT VB-7B



MAY 1990


ELEVATION — FEET
C of R of WPVI(TV) A.M.S.L.
1324
SHADOW AREA
DISTANCE — MILES
39.2

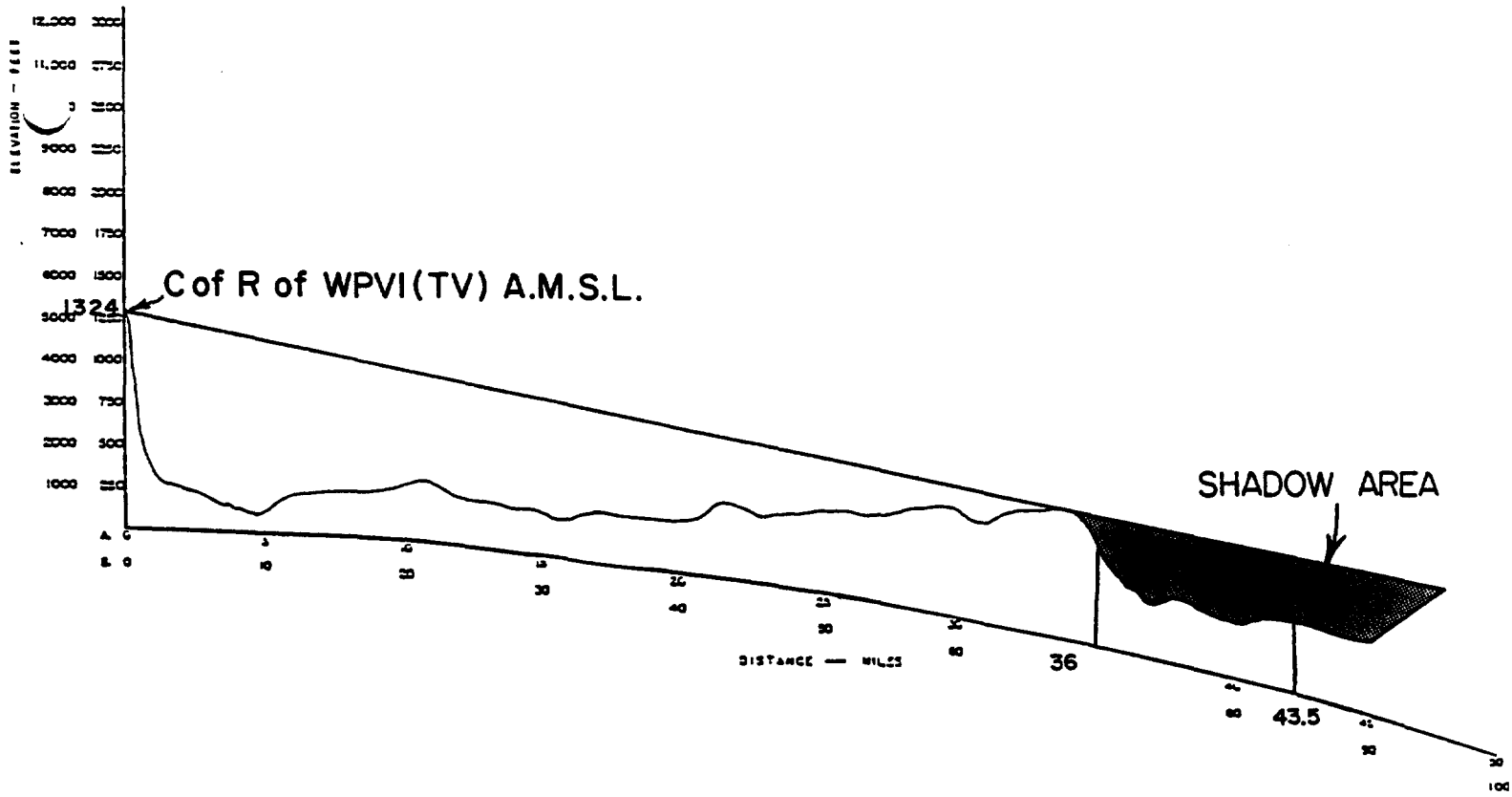

ELEVATION — FEET
C of R of WPVI(TV) A.M.S.L.
1324
SHADOW AREA
DISTANCE — MILES
36
43.5

EXHIBIT 7D