

ENGINEERING EXHIBIT 18  
Hope Christian Church of Marlton, Inc.  
Station WVBV  
Application for Minor Changes  
Medford Lakes, New Jersey

TV CHANNEL 6 PROTECTION REQUIREMENTS

A study was performed to determine the extent of interference to WPVI TV channel 6, Philadelphia, PA. The EDX computer program was used for this study using 30-second terrain data and 1 degree spacing between azimuths. WPVI facilities were derived from the FCC CDBS database

The procedures outlined in 73.525 were used. The signal of WPVI was found to be between 70 and 74 dBu at the proposed site. Using figure 73.599 the corresponding FM contours are 77.2; 76.4; 75.5; 74.8 and 74.1 dBu. The 1.233 kW ERP of the proposed DA azimuth pattern was divided by 40 ( $=0.031\text{kW}$ ) and this value was increased by 1 watt to account for the omni-directional horizontally polarized antenna. No portion of the predicted area covers a city of 50,000 persons.

An adjustment of 6 dB was taken for TV antenna receive directivity as permitted by 73.525.

The elevation pattern of the proposed antenna was not used in preparing this exhibit.

The resultant contour relationships and the interference area are shown in Figures 1-3. The plot includes county subdivisions. The resulting interference area occurs in a rural portion of Camden County, New Jersey.

Using the EDX computer program and 2000 US Census data at the centroid block level, 2958 persons were found to be within this area.

A description of the EDX population counting program, tabulation of the population and the coordinates of the centroids inside the interference area follows.

The application therefore complies with 73.525.

## DESCRIPTION OF EDX PROGRAM POPULATION COUNTING METHOD AND TABULATION OF POPULATION

The EDX Computer program that was used to count population within the FM/TV 6 interference area uses centroid block level population data to count the total population of each centroid.

The coordinates of each centroid from the US Census database for 2000 was converted to seconds and stored with total population data in the EDX computer program. In the program North Latitude and East Longitude are positive and West Longitude and South Latitude are negative. Expressed in seconds, the proposed WVBV transmitter site is located at 143021.0 seconds North Latitude and -269439.0 seconds West Longitude.

The program determines those centroids that are within the defined area, which in this case is the TV Channel 6 Interference Area as shown in Figures 1-3. The program totals these centroids and outputs the total population of all the centroids. The program also creates a temporary document file listing the coordinates (in seconds) and population of each centroid.

The centroids within the interference area and the population within each are tabulated here:

CENTROID COORDINATES		CENTROID
Longitude	Latitude	POPULATION
-269533.0	143073.2	2
-269535.2	143072.1	4
-269539.2	143070.3	14
-269543.3	143068.2	7
-269548.9	143065.3	3
-269556.1	143061.8	12
-269563.2	143058.2	10
-269560.1	143050.8	14
-269559.8	143054.9	5
-269553.1	143059.0	18
-269546.0	143062.5	16
-269543.7	143059.4	15
-269518.6	143053.7	65
-269542.8	143052.7	28

-269550.8	143055.9	21
-269548.4	143048.0	19
-269536.4	143045.2	26
-269527.6	143041.9	0
-269528.4	143045.9	0
-269527.1	143038.6	7
-269537.9	143041.5	13
-269549.8	143044.4	12
-269551.1	143040.9	24
-269539.3	143038.0	24
-269527.5	143035.6	9
-269525.5	143030.7	24
-269530.5	143032.5	7
-269540.5	143034.5	13
-269542.2	143030.4	11
-269533.9	143029.8	14
-269522.0	143028.2	6
-269517.4	143025.8	8
-269508.3	143029.9	5
-269505.4	143026.8	18
-269502.8	143022.7	7
-269510.9	143020.5	4
-269515.3	143022.4	4
-269524.9	143013.6	10
-269517.9	143018.3	2
-269526.8	143020.7	56
-269529.7	143019.6	32
-269532.3	143020.2	79
-269457.3	143106.2	0
-269465.2	143090.4	0
-269462.0	143072.7	13
-269399.2	143068.7	0
-269435.6	143063.8	5
-269467.4	143054.1	6
-269511.7	143058.0	50
-269513.1	143079.7	0
-269467.3	143046.4	33
-269431.9	143046.3	37
-269368.4	143049.2	0
-269349.4	143046.3	0
-269336.1	143038.8	0
-269350.7	143040.0	0
-269351.3	143021.9	0
-269381.8	143029.8	71
-269405.1	143037.5	68
-269422.3	143002.6	93

-269449.9	143017.0	81
-269482.3	143022.4	69
-269467.3	143002.9	9
-269461.1	143001.4	18
-269465.1	142999.1	0
-269458.7	142994.6	36
-269436.1	142992.3	69
-269400.5	142996.8	88
-269430.7	142979.3	0
-269411.6	143062.2	0
-269561.0	143099.2	61
-269548.3	143102.7	28
-269563.0	143093.8	5
-269518.7	143129.9	6
-269514.3	143103.9	45
-269536.0	143088.8	40
-269554.0	143094.0	5
-269559.5	143089.5	14
-269551.8	143091.0	9
-269548.2	143086.5	14
-269550.4	143080.7	52
-269545.8	143078.7	15
-269543.6	143075.2	28
-269544.6	143071.0	0
-269418.0	143145.3	6
-269459.9	143146.2	26
-269421.1	143136.5	29
-269399.4	143131.0	49
-269396.3	143140.5	12
-269378.3	143134.0	54
-269375.7	143125.4	1
-269383.3	143115.6	98
-269384.2	143119.3	38
-269391.0	143112.7	21
-269399.8	143115.5	18
-269402.8	143123.1	59
-269424.3	143128.7	51
-269425.2	143113.2	138
-269432.7	143125.8	2
-269421.8	143121.2	25
-269410.5	143118.5	21
-269412.4	143114.2	3
-269423.7	143117.8	37
-269403.0	143109.1	4
-269392.9	143107.7	0
-269474.2	143145.3	14

-269491.7	143138.7	140
-269459.7	142984.8	36
-269466.8	142996.7	0
-269470.0	143000.8	6
-269477.5	143005.9	32
-269497.6	143017.3	0
-269496.4	143006.6	21
-269493.8	143009.5	27
-269488.4	143009.4	18
-269483.5	143003.1	9
-269476.6	142993.8	48
-269475.1	143000.8	22
-269477.3	142987.6	13
-269444.4	142952.2	3
-269464.3	142970.3	26
-269454.0	142948.8	77
-269565.8	143067.8	38
	Total Persons	2958

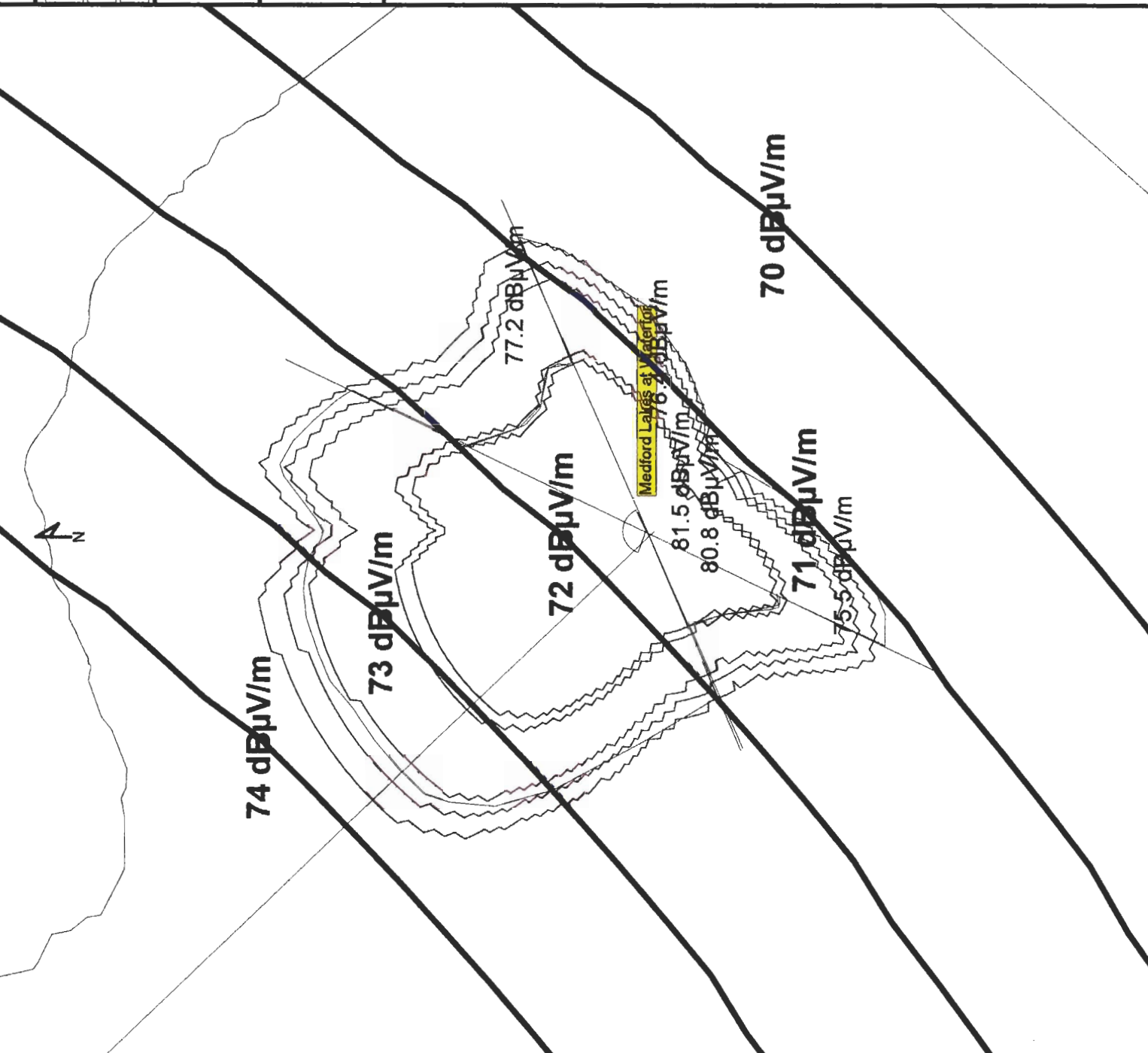
quick contours

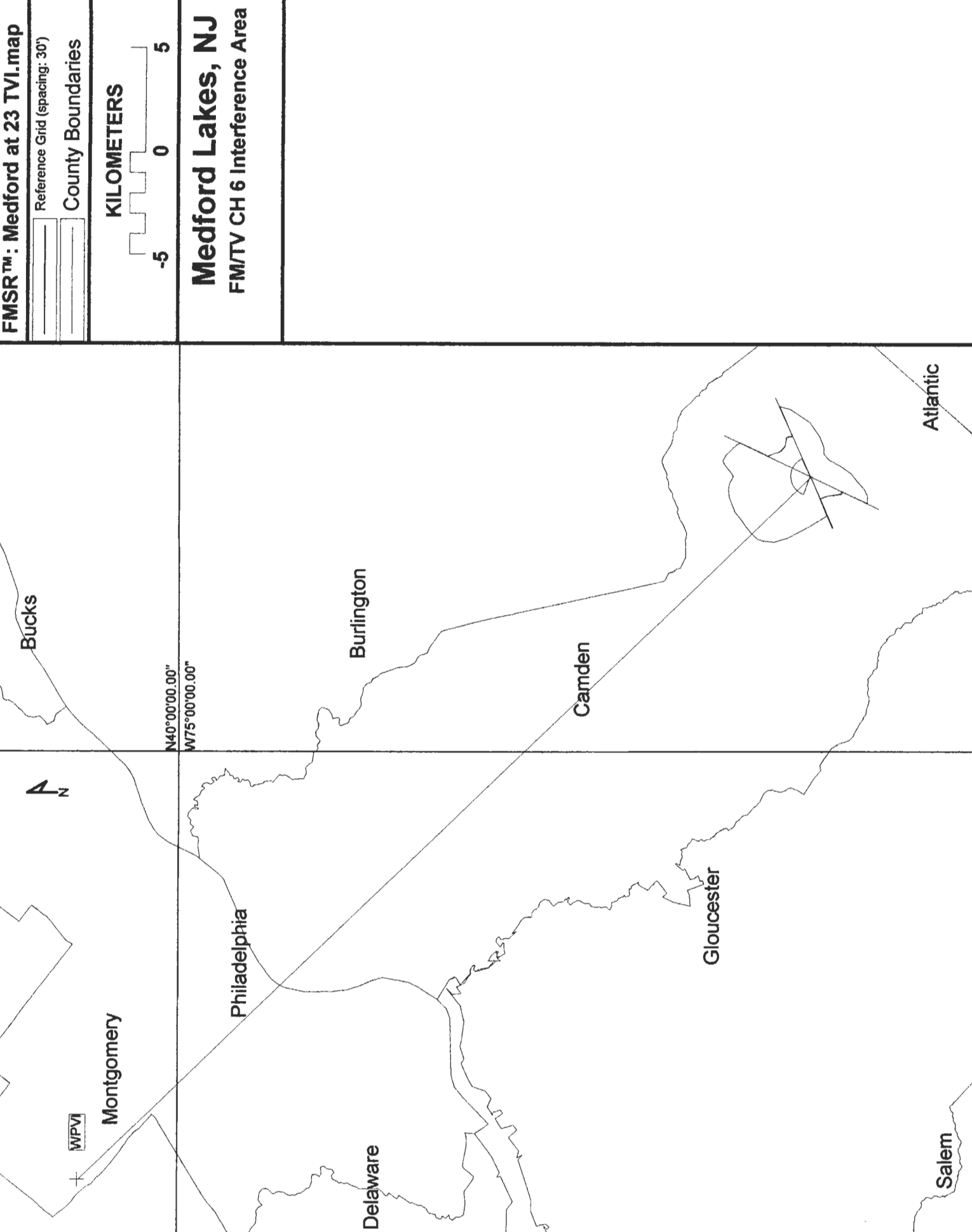
Reference Grid (spacing: 30')

County Boundaries



**Medford Lakes, NJ**  
FM/TV CH 6 Interference Area





Reference Grid (spacing: 30')

County Boundaries

KILOMETERS



# Medford Lakes, NJ

FM/TV CH 6 Interference Area

4<sub>N</sub> Burlington

Camden

Medford Lakes at Waterford

Atlanti



Reference Grid (spacing: 30')  
County Boundaries

KILOMETERS



# Medford Lakes, NJ

FM/TV CH 6 Interference Area

