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WHYY INCORPORATED
PHILADELPHIA, PA
PERMITTEE OF WHYY-DT CHANNEL 12
WILMINGTON, DELAWARE

FCC Facility ID #72338

FCC FILE Nos. BLEDT-20110907ADS
BMPEDT-20091204ADC
BMPEDT-20080619AHU

APPLICATION FOR A COVERING LICENSE FOR CONSTRUCTION PERMIT BMPEDT-20091204ADC

EXHIBIT 7a

This revised Exhibit 7 is being supplied at the TELCON request of the Media Bureau staff asking that new tabulation and plot azimuth and elevation data for the actual antenna installed at WHYY-DT. This modified and expanded Exhibit 7a provides the requested information.

The underlying construction permit specified the proposed directional transmitting antenna as a Dielectric Communications (DIE) Model THV-11A12-R C150. The antenna installed is a similar mechanical and electrical design manufactured by Propagation Systems, Incorporated (PSI) Model PSIVSM12DMC-12.

The azimuth pattern of the installed antenna conforms to the pattern as shown in Paragraph 10e at all azimuths to within +0.230 and –1.11 dB. Tables 1, 1a and 2 and

Figures 1, 2a and 2b attached show the installed PSI Model PSIVSM12DMC-12 directional antenna azimuth and elevation pattern tabulations and plots.

Exhibit 1 of CP application BMPEDT-20091204ADC corrected Tech Box Question 10e. The directional antenna orientation is installed at 105 degrees as specified in the application Tech Box 10e and the PSI manufacturer's supplied data adjusted to reference True North. Included showings ion pages 3 through 9 are:

Table 1: Azimuth pattern tabulation of the PSI Model PSIVSM12DMC-12 antenna installed.
Table 1a: Azimuth pattern tabulation adjustments to manufacturer's plot of the PSI Model PSIVSM12DMC-12 antenna installed for set non-rotated data with True North reference.
Figure 1: Manufacturer's azimuth pattern plot WITH 105 Degree Rotation included.
Table 2: Elevation pattern tabulation for the PSI Model PSIVSM12DMC-12 antenna installed.
Figure 2a: Close-in plot detail of the PSI Model PSIVSM12DMC-12 antenna installed.
Figure 2b: +30 to –90-degree plot of the PSI Model PSIVSM12DMC-12 antenna installed.

As shown in Table 1a, the maximum positive deviation from the azimuth pattern authorized in BMPEDT-20091204ADC occurs at 120 and 130 degrees True with an increase of 1.6% or +0.23 dB while the maximum decrease occurs at 250 degrees True with a decrease of 1.65% or –1.11 dB.

Based on this data, we believe that the installed antenna complies with the +0.5 dB standard allowance for directional antennas.

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EXHIBIT 7a - TABLE 1

PSI Model PSIVSM12DMC-12
This tabulation **INCLUDES** 105 degree Rotation

10 Degree

Angle	Field	ERP (kW)	ERP (dBk)
0	0.814	19.88	12.984
10	0.881	23.28	13.671
20	0.933	26.11	14.169
30	0.969	28.17	14.498
40	0.990	29.40	14.684
50	0.999	29.94	14.763
60	1.000	30.00	14.771
70	0.997	29.82	14.745
80	0.994	29.64	14.719
90	0.991	29.46	14.693
100	0.990	29.40	14.684
110	0.990	29.40	14.684
120	0.991	29.46	14.693
130	0.994	29.64	14.719
140	0.997	29.82	14.745
150	1.000	30.00	14.771
160	0.999	29.94	14.763
170	0.990	29.40	14.684
180	0.969	28.17	14.498
190	0.993	29.58	14.710
200	0.881	23.28	13.671
210	0.814	19.88	12.984
220	0.737	16.30	12.121
230	0.657	12.95	11.123
240	0.583	10.20	10.085
250	0.523	8.21	9.141
260	0.481	6.94	8.414
270	0.457	6.27	7.970
280	0.447	5.99	7.777
290	0.447	5.99	7.777
300	0.457	6.27	7.970
310	0.481	6.94	8.414
320	0.523	8.21	9.141
330	0.583	10.20	10.085
340	0.657	12.95	11.123
350	0.737	16.30	12.121

Cardinal

Angle	Field	ERP (kW)	ERP (dBk)
0	0.814	19.88	12.984
45	0.995	29.70	14.728
90	0.991	29.46	14.693
135	0.996	29.73	14.732
180	0.969	28.17	14.498
225	0.766	17.60	12.456
270	0.457	6.27	7.970
315	0.502	7.56	8.785

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
60	1.000	30.00	14.771
150	1.000	87.00	19.395

Minima

Angle	Field	ERP (kW)	ERP (dBk)
280	0.457	6.27	7.970
290	0.457	6.27	7.970

ERP= 30.0 kW

WHYY-DT COVERING LICENSE APPLICATION -BLEDT-20110907ADS

EXHIBIT 7a - TABLE 1a

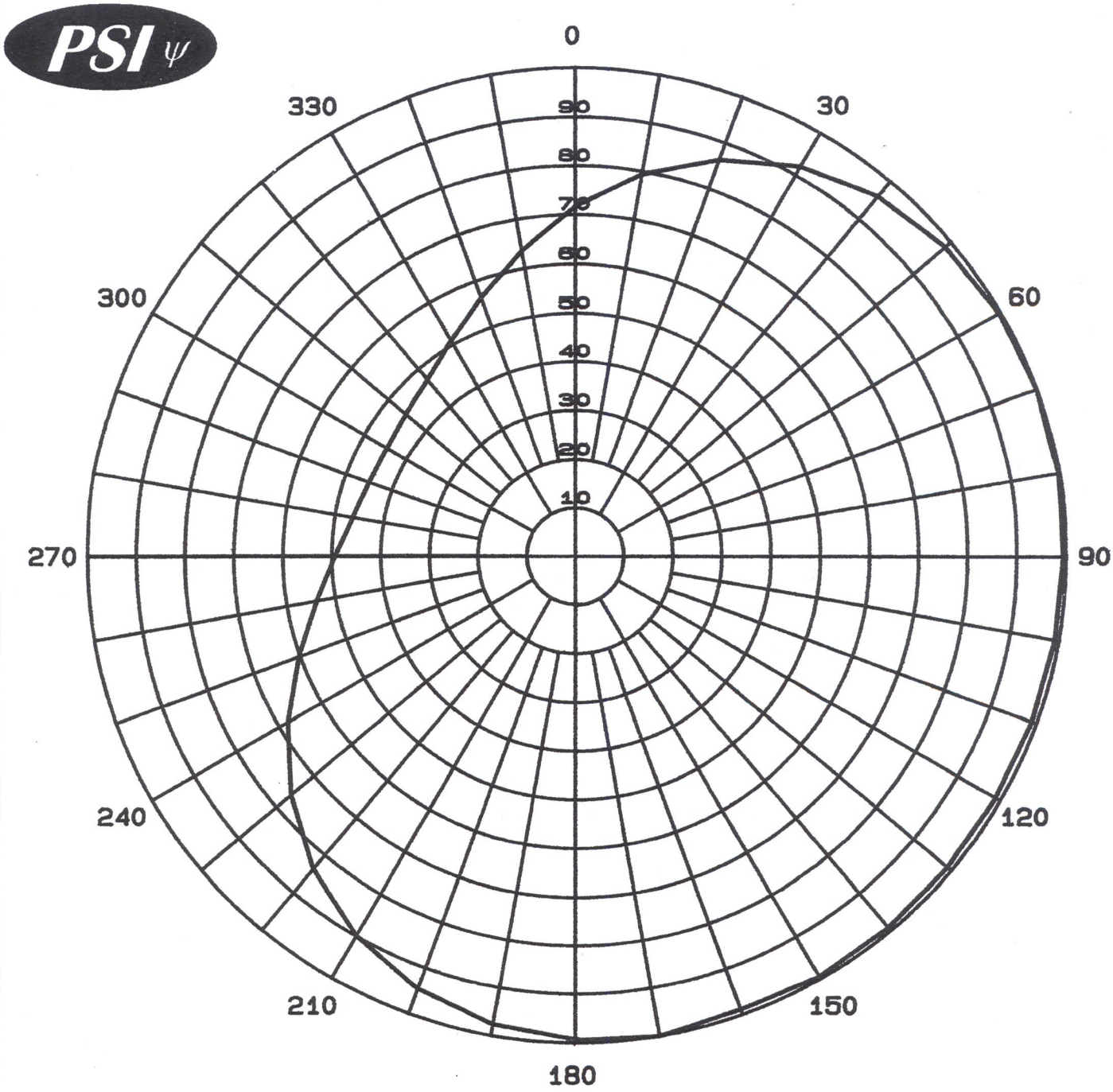
WHYY-DT CP DIE Antenna
Pattern Rotation 105 degrees
CP

AZIMUTH	Non rotated Field
0	0.990
10	0.991
20	0.993
30	0.996
40	0.990
50	1.000
60	0.994
70	0.977
80	0.946
90	0.899
100	0.836
110	0.761
120	**0.681**
130	**0.604**
140	0.539
150	0.492
160	0.463
170	0.449
180	0.446
190	0.453
200	0.472
210	0.509
220	0.564
230	0.634
240	0.713
250	0.792
260	0.863
270	0.920
280	0.960
290	0.985
300	0.997
310	1.000
320	0.998
330	0.995
340	0.992
350	0.990

WHYY-DT PSI VSM12DMC-12 Antenna
Pattern Rotation 105 degrees
As Built

PSI Rotation Angle Calculation correction		Non rotated Field	AZIMUTH	FIELD Difference	Percent Difference
100	0.99				
110	0.99	0.99	0	0	0.00
120	0.991	0.9905	10	-0.0005	-0.05
130	0.994	0.9925	20	-0.0005	-0.05
140	0.997	0.9955	30	-0.0005	-0.05
150	1.000	0.9985	40	0.0085	0.85
160	0.999	0.9995	50	-0.0005	-0.05
170	0.990	0.9945	60	0.0005	0.05
180	0.969	0.9795	70	0.0025	0.25
190	0.933	0.951	80	0.005	0.50
200	0.881	0.907	90	0.008	0.80
210	0.814	0.8475	100	0.0115	1.15
220	0.737	0.7755	110	0.0145	1.45
230	**0.657**	**0.697**	**120**	**0.016**	**1.60**
240	**0.583**	**0.62**	**130**	**0.016**	**1.60**
50	0.523	0.553	140	0.014	1.40
260	0.481	0.502	150	0.01	1.00
270	0.457	0.469	160	0.006	0.60
280	0.447	0.452	170	0.003	0.30
290	0.447	0.447	180	0.001	0.10
300	0.457	0.452	190	-0.001	-0.10
310	0.481	0.469	200	-0.003	-0.30
320	0.523	0.502	210	-0.007	-0.70
330	0.583	0.553	220	-0.011	-1.10
340	0.657	0.62	230	-0.014	-1.40
350	0.737	0.697	240	-0.016	-1.60
0	0.814	0.7755	250	-0.0165	-1.65
10	0.881	0.8475	260	-0.0155	-1.55
20	0.933	0.907	270	-0.013	-1.30
30	0.969	0.951	280	-0.009	-0.90
40	0.990	0.9795	290	-0.0055	-0.55
50	0.999	0.9945	300	-0.0025	-0.25
60	1.000	0.9995	310	-0.0005	-0.05
70	0.997	0.9985	320	0.0005	0.05
80	0.994	0.9955	330	0.0005	0.05
90	0.991	0.9925	340	0.0005	0.05
100	0.990	0.9905	350	0.0005	0.05
Additional Azimuths		1.000	165		
		1.000	255		

Worst case increase variation is at 120 and 130 degrees with increase of 0.016 in field or 1.6%.
At 130 degrees 1.6% = 20 x LOG (0.620/0.604) = +0.23 dB



Calculated Relative Field
Azimuth Plane Pattern
Antenna: PSIVSM12DMC-12
Antenna Type: VHF Slot
Directivity: 1.5 (1.76 dB)
Peak Gain: 18.0 (12.55 dB)
Orientation: 105 degrees
Station: WHYY

Propagation Systems Inc.
PO Box 113
Ebensburg, PA 15931

EXHIBIT 7a –FIGURE 1

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EXHIBIT 7a - TABLE 2

PSI Model PSIVSM12DMC-12
CLOSE-IN ELEVATION PATTERN

BT = 0.75 DEG.

Elevation

Angle	Field	ERP (kW)	ERP (dBk)
3.00	0.365	4.00	6.017
2.50	0.500	7.50	8.751
2.00	0.618	11.46	10.591
1.50	0.731	16.03	12.050
1.00	0.825	20.42	13.100
0.50	0.913	25.01	13.981
0.00	0.965	27.94	14.462
-0.25	0.978	28.69	14.578
-0.50	0.985	29.11	14.640
-0.75	1.000	30.00	14.771
-1.00	0.985	29.11	14.640
-1.25	0.978	28.69	14.578
-1.50	0.965	27.94	14.462
-1.75	0.945	26.79	14.280
-2.00	0.923	25.56	14.075
-2.50	0.837	21.02	13.226
-3.00	0.745	16.65	12.214
-3.50	0.633	12.02	10.799
-4.00	0.522	8.17	9.125
-4.50	0.412	5.09	7.069
-5.00	0.321	3.09	4.901
-5.50	0.250	1.88	2.730
-6.00	0.221	1.47	1.659
-6.50	0.221	1.47	1.659
-7.00	0.233	1.63	2.118
-7.50	0.250	1.88	2.730
-8.00	0.257	1.98	2.970
-8.50	0.250	1.88	2.730
-9.00	0.232	1.61	2.081
-9.50	0.208	1.30	1.132
-10.00	0.172	0.89	-0.518

prepared by
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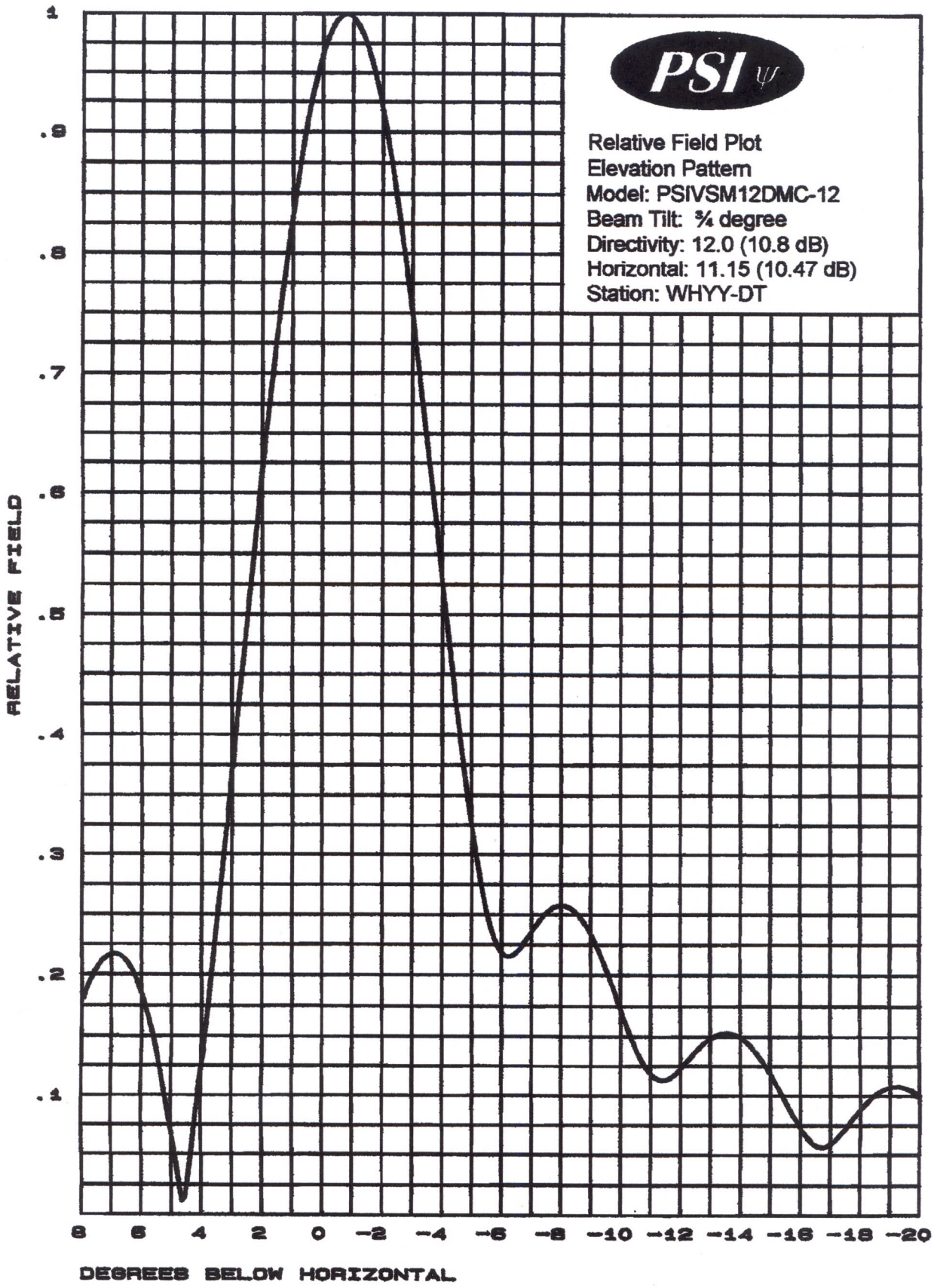
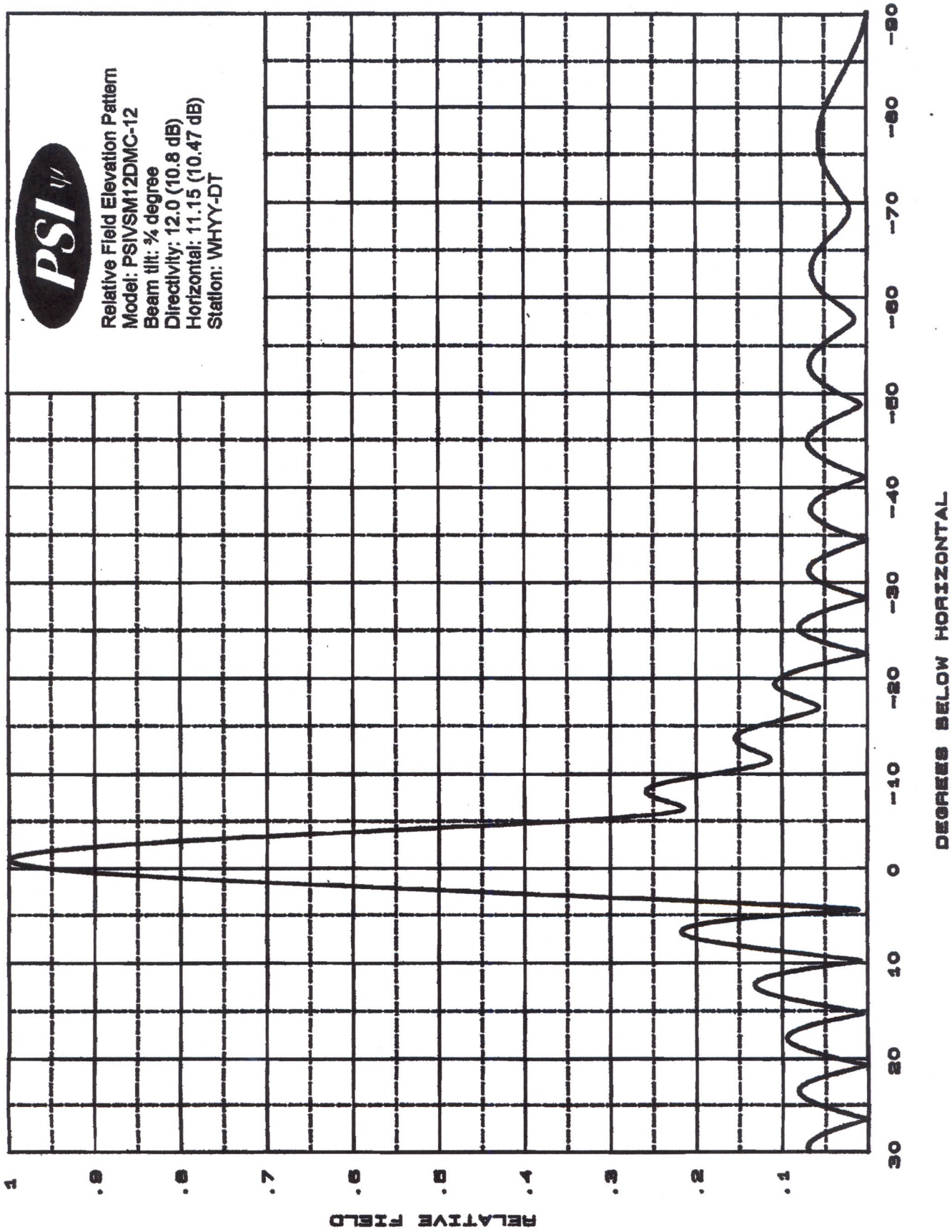
ERP= 30.0 kW
CALL WHYY-DT

WHYY-DT COVERING LICENSE APPLICATION – FIGURE 2A



WHYY-DT COVERING LICENSE APPLICATION – FIGURE 2B