

ENGINEERING STATEMENT
RE MINOR MODIFICATION TO DTV
CONSTRUCTION PERMIT BMPCDT-20020227ABM
ON BEHALF OF
WZVN-DT, NAPLES, FLORIDA
CHANNEL 41 1000 KW MAX ERP 453.9 METERS HAAT

APRIL 2003

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Introduction

This engineering statement has been prepared on behalf of Montclair Communications, Inc., licensee of WZVN-TV of Naples, Florida, in support of its request for a minor change in its DTV construction permit. At present, WZVN-TV operates on NTSC TV Channel 26(-) (542-548 MHz) with 5000 kW effective radiated power ("ERP") (directional) and 368.0 meters antenna height above average terrain ("HAAT"). WZVN-TV has been allotted Channel 41 (632-638 MHz) for its digital TV operation and has been authorized to construct a facility (BMPCDT-20020227ABM) with 1000 kW maximum ERP (directional) and 453.0 meters HAAT. The purpose of this report is to correct the site coordinates stated in the aforementioned construction permit.

Antenna Site

There is no change in the existing antenna site. WZVN-DT is simply proposing to correct its site coordinates in order to align them with the corrected antenna structure registration (1231697). Since the coordinates have changed, it is possible that the elevation data has changed as well. This report serves to note any and all necessary changes and their effects.

The WZVN-DT antenna site is located at 11251 Highway 31 in Punta Gorda, Florida. The INCORRECT geographic coordinates as listed in the allotment and construction permit are:

North Latitude: 26E 49' 21"

West Longitude: 81E 45' 47"

(NAD-27)

The CORRECT geographic coordinates of the existing tower, as specified on the aforementioned FCC antenna structure registration, are as follows:

North Latitude: 26E 49' 21.4"

West Longitude: 81E 45' 54.6"

(NAD-83)

When these coordinates are converted to NAD-27, the result is:

North Latitude: 26E 49' 21.2"

West Longitude: 81E 45' 54.3"

(NAD-27)

Antenna and Elevation Data

Antenna:	Andrew	ABBP14H3-HTP4X-15/41 or equivalent
	Beam Tilt	0.75° electrical
	Directional Max. Power Gain	53.8 17.31 dB (See Exhibit E-2 per §73.625)
Elevation of the site above mean sea level:		10.1 meters (33.0 feet)
Elevation of the top of existing supporting structure above ground including beacon		462.1 meters (1516.1 feet)
Elevation of the top of supporting structure above mean sea level including beacon		472.2 meters (1549.2 feet)
Height of DTV antenna radiation center meters above ground		453.1 meters (1486.5 feet)
Height of DTV antenna radiation center above mean sea level		463.2 meters (1519.7 feet)
Height of DTV antenna radiation center above average terrain		453.9 meters (1489.2 feet)

Authorized Effective Radiated Power

The maximum ERP authorized by the construction permit for the DTV operation is 1000 kW at 453.0 meters HAAT. This modification requests facilities with a maximum ERP of 1000 kW at an HAAT of 453.9 meters. Thus, the coordinate correction will have only a slight affect on the maximum ERP or HAAT values. This slight increase in height will likely extend the predicted 41 dBu contour beyond that authorized by the existing construction permit. Therefore, a full FCC Longley-Rice study was completed to ensure that this correction would

not cause any prohibited interference to its neighboring broadcast stations. The results of that study are discussed in detail under the “Other Stations and Interference Issues” section of this report.

The attached map (Exhibit E-3) shows the computed F(50,90) 48 dBu and 41 dBu contours predicted according to Section 73.625(b) of the Commission’s rules for the corrected facilities. For comparison purposes, the predicted 41 dBu contour for the facilities authorized by the constructions permit has also been included.

Principal Community Coverage

In MM Docket No. 00-39, the Commission adopted rules to require DTV stations to place a stronger TV signal over the principal community. The operation proposed by WZVN-DT places a predicted 48 dBu contour over the community of Naples, Florida.

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 value has been used to calculate ERP where the vertical radiation pattern at these angles is greater than 90% of the maximum.

Table I provides the distances along the radials, spaced every 10 degrees in azimuth, to the predicted F(50,90) 48 and 41 dBu contours, the average elevations, and the effective antenna heights.

The distances along each radial to the limits of F(50,90) 48 dBu and 41 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.

Topographic Data

The average elevation data for each radial is based on the NGDC 3-second computerized terrain database.

Other Stations and Interference Issues

There are four total broadcast (two TV and two DTV) stations located within 0.5 km of the proposed site. No objectionable interference problems are anticipated, however, if any problems occur, the permittee will take the necessary steps to resolve them. There are no broadcast radio (AM or FM) stations within 3.22 km of the proposed site.

Even though there is no change in the actual existing site, the coordinate correction could lead to possible interference issues. (There is a distance of 0.202 km between the two sets of coordinates.) To error on the side of caution, an FCC Longley-Rice study was run using the new, correct, coordinates.

To perform the Longley-Rice study, a version of the Longley-Rice program described in OET Bulletin No. 69 (July 2, 1997) and the Public Notice, "Additional Application Processing Guidelines for Digital Television (DTV)" (August 1998) was executed. This version uses the FCC's FORTRAN-77 code that has been modified only to the extent necessary (primarily I/O handling) for the program to run on a Win32/Intel i386-based platform.

Comparison of service/interference areas and populations indicates that this model closely matches the FCC's evaluation program. Best efforts have been made to use data and calculations identical to the FCC's program. Any slight differences are attributable to compiler, operating system, and/or processor characteristics. The effect of any variance in calculated population values versus the FCC's program is minimized when differencing a given model's results, such as calculating new interference as total interference less baseline interference. Any variance effect is further reduced when using ratios of calculated population values such as measuring the incremental population affected as a percent of the total population served. The

model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 4 km² using 3-second terrain data sampled approximately every 0.1 km at one degree azimuth intervals with 1990 census centroids.

The results of the study showed that no new interference problems should be expected between WZVN-DT and the other NTSC or DTV stations within its coordination distance.

Environment Statement

The following broadcast stations are operating from the tower:

WZVN-DT [Proposed CP MOD]

WBBH-DT [CP MOD]

WBBH-TV, while not operating from the same tower, has high power licensed facilities approximately 200 meters from the WZVN-DT site. Due to this proximity, WBBH-TV will also be included in this study. The radio frequency field level (“RFF”) contributions of each of the three stations will be calculated and summed to form a total representative value.

WZVN-DT [Proposed CP MOD]

Channel 41 Freq: 632-638 MHz Range

$$S = \frac{33.4 (F^2) ERP}{R^2}$$

ERP = 1000 kW (Horizontal only)
R = 451.1 meters (antenna height above ground -2 meters)
F = 0.1 (assumed)

$$S \# 1.64 \text{ F W/cm}^2$$

The limit for an uncontrolled environment (general population) for this frequency is 423.3 F W/cm².

WZVN-DT contributes less than 0.5% RFF level for an uncontrolled environment (general population) two meters above the ground.

WBBH-DT [CP MOD]

Channel 15 Freq: 476-482 MHz Range

$$S = \frac{33.4 (F^2) ERP}{R^2}$$

ERP = 950 kW (Horizontal only)
R = 448.9 meters (antenna height above ground -2 meters)
F = 0.1 (assumed)

S # 1.58 F W/cm²

The limit for an uncontrolled environment (general population) for this frequency is 319.3 F W/cm².

WBBH-DT contributes less than 0.5% RFF level for an uncontrolled environment (general population) two meters above the ground.

WBBH-TV [LIC]

Channel 20(+) Freq: 506-512 MHz Range

$S = \frac{33.4 (F^2) ERP}{R^2}$	ERP = 5000 kW (Horizontal only)
	R = 438.1 meters (antenna height above ground -2 meters)
	F = 0.2 (assumed)

S # 17.4 F W/cm²

The limit for an uncontrolled environment (general population) for this frequency is 339.3 F W/cm².

WBBH-TV contributes less than 5.2% RFF level for an uncontrolled environment (general population) two meters above the ground.

Therefore the total RF percentage two meters above the ground at the base of the tower will still be less than 10% of the FCC guidelines limit, when all transmitters are operational.

The permittee indicates that all authorized personnel climbing the tower will be alerted to the potential zones of high radiation on the tower. Also should it be required, permittee indicates that it will operate with reduced power or terminate power completely while workers are on the tower.

Summary of Environmental Assessment

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations since the permittee indicates that the sole purpose of this application is to correct the existing tower coordinates and to correct coordinates and to adjust parameters to reflect the corrected site elevation. There are no other changes requested. As demonstrated above the total RFF percentage is less than 10% of the FCC guidelines.

TABLE I
DTV COVERAGE DATA
FOR PROPOSED OPERATION OF
WZVN-DT, NAPLES, FLORIDA
CHANNEL 41 1000 KW MAX ERP 453.9 METERS HAAT
APRIL 2003

<u>Radial</u>	<u>Effective</u>	<u>Average</u>		<u>Distance to Contour</u>	
<u>N ° E, T</u>	<u>Height</u>	<u>Elevation</u>	<u>ERP</u>	<u>48 dBu</u>	<u>41 dBu</u>
	<u>meters</u>	<u>meters</u>	<u>kW</u>	<u>km</u>	<u>km</u>
0	451.8	11.4	661.0	92.0	106.5
10	451.7	11.5	202.5	83.8	95.5
20	450.3	12.9	157.6	82.1	93.3
30	449.7	13.5	313.6	86.6	99.2
40	449.2	14.0	282.0	85.8	98.2
50	448.9	14.3	350.5	87.3	100.1
60	449.5	13.7	287.3	86.0	98.3
70	450.3	12.9	128.2	80.8	91.7
80	451.1	12.1	222.8	84.4	96.2
90	452.3	10.9	463.8	89.4	103.0
100	453.2	10.1	622.5	91.7	106.0
110	454.6	8.6	622.5	91.8	106.1
120	455.3	7.9	799.2	93.8	108.7
130	455.8	7.4	935.1	95.1	110.4
140	456.6	6.6	866.8	94.5	109.7
150	456.8	6.4	785.0	93.7	108.7
160	457.0	6.2	535.8	90.8	104.8
170	457.7	5.5	466.5	89.8	103.5
180	458.0	5.2	577.6	91.4	105.7
190	457.5	5.7	368.4	88.1	101.3
200	457.4	5.8	150.5	82.2	93.4
210	456.4	6.8	324.9	87.2	100.0
220	455.6	7.6	351.6	87.7	100.7
230	455.7	7.5	282.0	86.2	98.7
240	455.8	7.4	297.0	86.5	99.1
250	456.0	7.2	115.6	80.4	91.3
260	456.2	7.0	338.7	87.4	100.4
270	456.2	7.0	734.4	93.2	107.9
280	453.2	10.0	443.6	89.2	102.7

TABLE I
DTV COVERAGE DATA
FOR PROPOSED OPERATION OF
WZVN-DT, NAPLES, FLORIDA
CHANNEL 41 1000 KW MAX ERP 453.9 METERS HAAT
APRIL 2003
 (continued)

<u>Radial</u>	<u>Effective</u>	<u>Average</u>		<u>Distance to Contour</u>	
N ° E, T	<u>Height</u>	<u>Elevation</u>	<u>ERP</u>	<u>48 dBu</u>	<u>41 dBu</u>
	meters	meters	kW	km	km
290	451.2	12.0	624.1	91.6	105.9
300	451.9	11.3	900.6	94.5	109.6
310	452.3	10.9	855.6	94.1	109.2
320	451.7	11.5	960.4	95.0	110.3
330	451.4	11.8	919.7	94.6	109.8
340	451.4	11.8	501.3	90.0	103.7
350	451.5	11.7	538.8	90.5	104.4

ABOVE MEAN SEA LEVEL

ABOVE GROUND

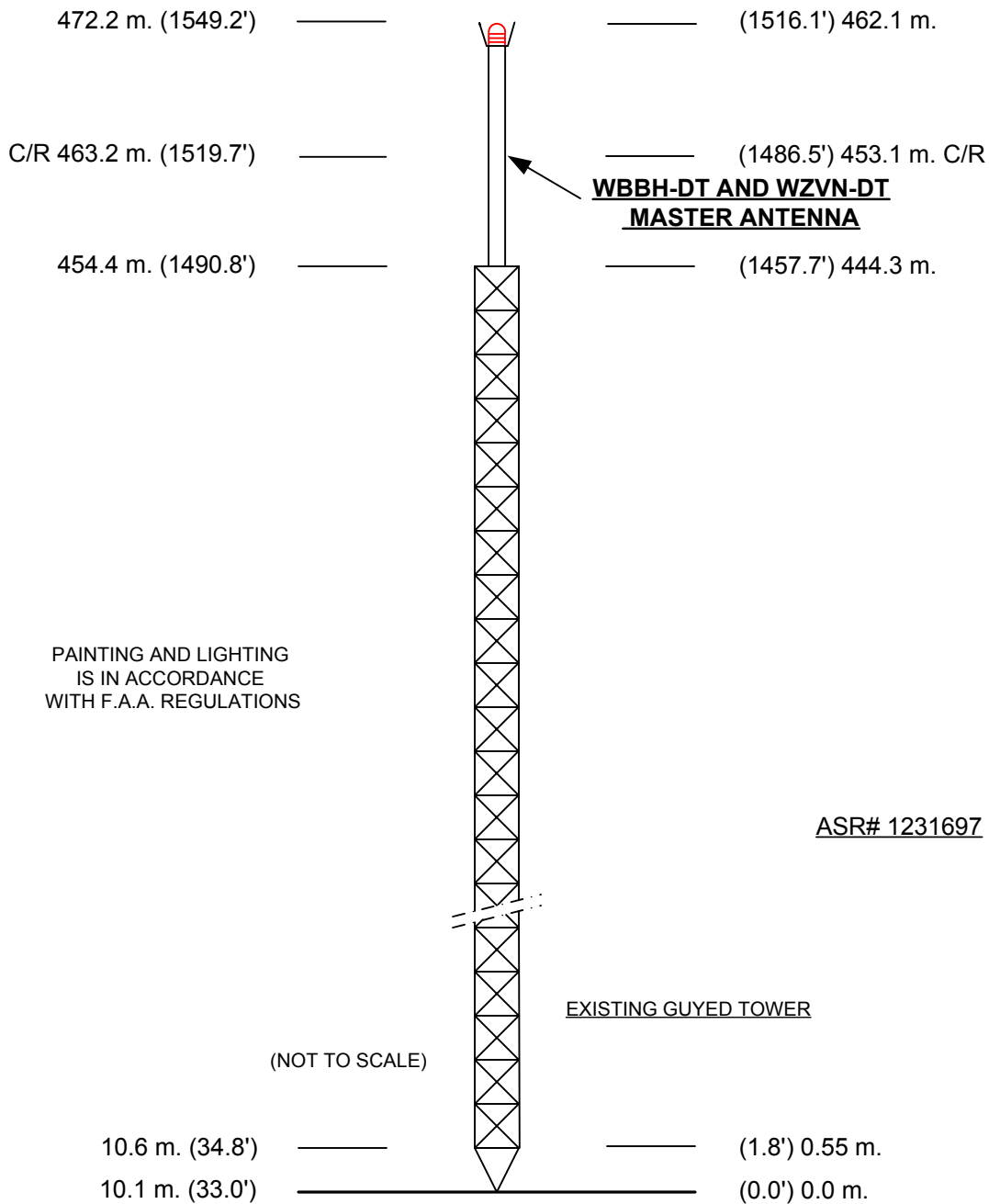
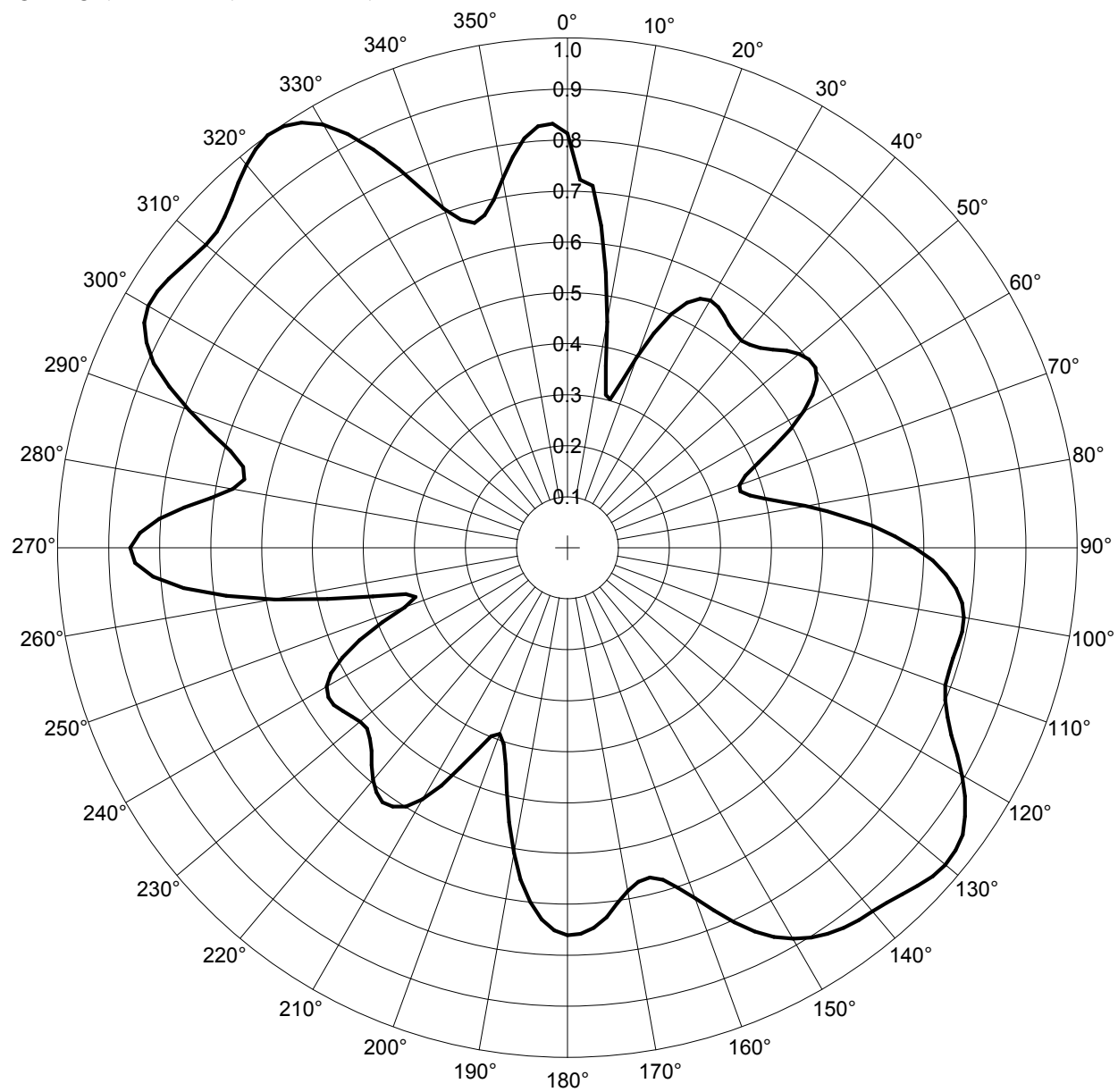


EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED DTV OPERATION OF
WZVN-DT, NAPLES, FLORIDA
APRIL 2003

COHEN, DIPPELL and EVERIST, P.C. CONSULTING ENGINEERS

HORIZONTAL PLANE PATTERN





TABULATED DATA FOR AZIMUTH PATTERN
TYPE : CH41AZ-H-BID-P4X

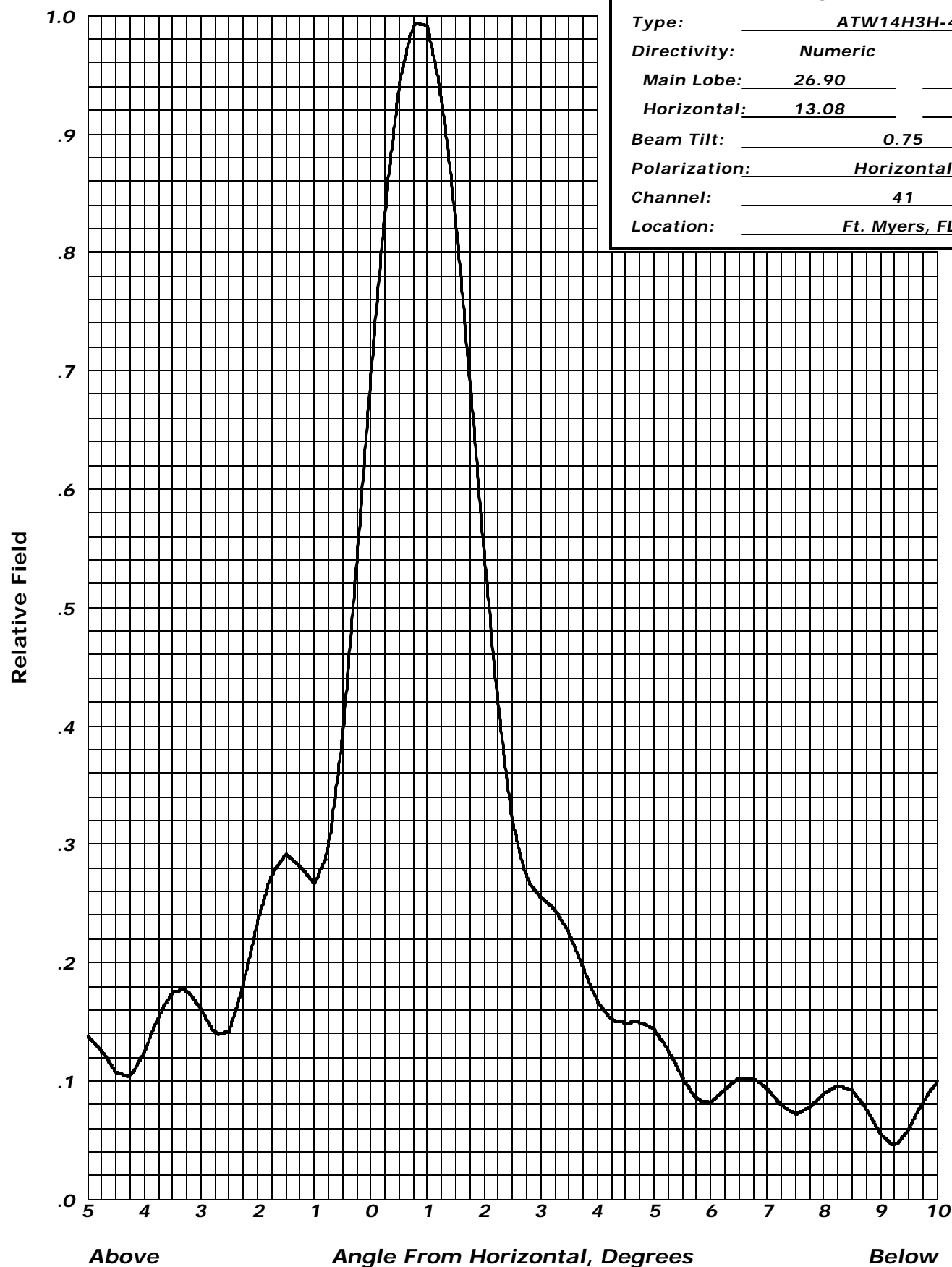
Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.813	-1.80	110	0.789	-2.05	220	0.593	-4.54	330	0.959	-0.36
2	0.772	-2.24	112	0.799	-1.95	222	0.573	-4.84	332	0.919	-0.73
4	0.712	-2.95	114	0.816	-1.77	224	0.553	-5.14	334	0.869	-1.22
6	0.635	-3.95	116	0.838	-1.53	226	0.539	-5.37	336	0.814	-1.78
8	0.545	-5.28	118	0.866	-1.25	228	0.530	-5.51	338	0.756	-2.42
10	0.450	-6.93	120	0.894	-0.97	230	0.531	-5.49	340	0.708	-3.00
12	0.365	-8.75	122	0.920	-0.73	232	0.537	-5.40	342	0.676	-3.40
14	0.310	-10.18	124	0.941	-0.52	234	0.545	-5.27	344	0.663	-3.57
16	0.303	-10.36	126	0.958	-0.37	236	0.552	-5.16	346	0.672	-3.46
18	0.341	-9.34	128	0.965	-0.31	238	0.553	-5.15	348	0.697	-3.13
20	0.397	-8.02	130	0.967	-0.30	240	0.545	-5.28	350	0.734	-2.69
22	0.454	-6.86	132	0.963	-0.33	242	0.525	-5.61	352	0.774	-2.23
24	0.502	-5.98	134	0.954	-0.41	244	0.491	-6.17	354	0.808	-1.85
26	0.535	-5.43	136	0.945	-0.49	246	0.446	-7.01	356	0.829	-1.62
28	0.554	-5.13	138	0.937	-0.56	248	0.391	-8.16	358	0.832	-1.60
30	0.560	-5.03	140	0.931	-0.62	250	0.340	-9.38	360	0.813	-1.80
32	0.557	-5.09	142	0.927	-0.66	252	0.313	-10.08			
34	0.549	-5.21	144	0.922	-0.71	254	0.330	-9.63			
36	0.540	-5.36	146	0.913	-0.79	256	0.393	-8.12			
38	0.533	-5.46	148	0.902	-0.90	258	0.482	-6.33			
40	0.531	-5.50	150	0.886	-1.05	260	0.582	-4.71			
42	0.535	-5.44	152	0.864	-1.27	262	0.676	-3.40			
44	0.545	-5.28	154	0.837	-1.55	264	0.757	-2.42			
46	0.560	-5.04	156	0.804	-1.90	266	0.815	-1.78			
48	0.578	-4.77	158	0.767	-2.30	268	0.848	-1.43			
50	0.592	-4.55	160	0.732	-2.72	270	0.857	-1.34			
52	0.601	-4.42	162	0.701	-3.08	272	0.839	-1.53			
54	0.601	-4.42	164	0.678	-3.38	274	0.803	-1.91			
56	0.589	-4.59	166	0.667	-3.52	276	0.756	-2.44			
58	0.567	-4.92	168	0.669	-3.49	278	0.706	-3.03			
60	0.536	-5.41	170	0.683	-3.32	280	0.666	-3.53			
62	0.496	-6.10	172	0.704	-3.05	282	0.648	-3.77			
64	0.451	-6.91	174	0.728	-2.76	284	0.655	-3.67			
66	0.410	-7.75	176	0.747	-2.53	286	0.688	-3.25			
68	0.376	-8.50	178	0.758	-2.40	288	0.737	-2.65			
70	0.358	-8.93	180	0.760	-2.39	290	0.790	-2.05			
72	0.357	-8.94	182	0.751	-2.49	292	0.842	-1.49			
74	0.372	-8.60	184	0.731	-2.73	294	0.888	-1.04			
76	0.398	-8.01	186	0.699	-3.11	296	0.919	-0.73			
78	0.432	-7.29	188	0.658	-3.64	298	0.940	-0.54			
80	0.472	-6.53	190	0.607	-4.33	300	0.949	-0.45			
82	0.514	-5.78	192	0.550	-5.18	302	0.949	-0.45			
84	0.557	-5.08	194	0.494	-6.12	304	0.944	-0.50			
86	0.601	-4.42	196	0.442	-7.08	306	0.936	-0.58			
88	0.642	-3.84	198	0.405	-7.86	308	0.929	-0.64			
90	0.681	-3.34	200	0.388	-8.23	310	0.925	-0.67			
92	0.716	-2.91	202	0.399	-7.98	312	0.926	-0.66			
94	0.744	-2.56	204	0.435	-7.23	314	0.935	-0.58			
96	0.766	-2.31	206	0.480	-6.37	316	0.948	-0.46			
98	0.781	-2.15	208	0.528	-5.55	318	0.964	-0.32			
100	0.789	-2.06	210	0.570	-4.88	320	0.980	-0.18			
102	0.791	-2.04	212	0.598	-4.47	322	0.993	-0.06			
104	0.789	-2.06	214	0.613	-4.24	324	1.000	0.00			
106	0.787	-2.08	216	0.617	-4.19	326	0.997	-0.03			
108	0.787	-2.08	218	0.609	-4.31	328	0.984	-0.14			



ANDREW

ELEVATION PATTERN

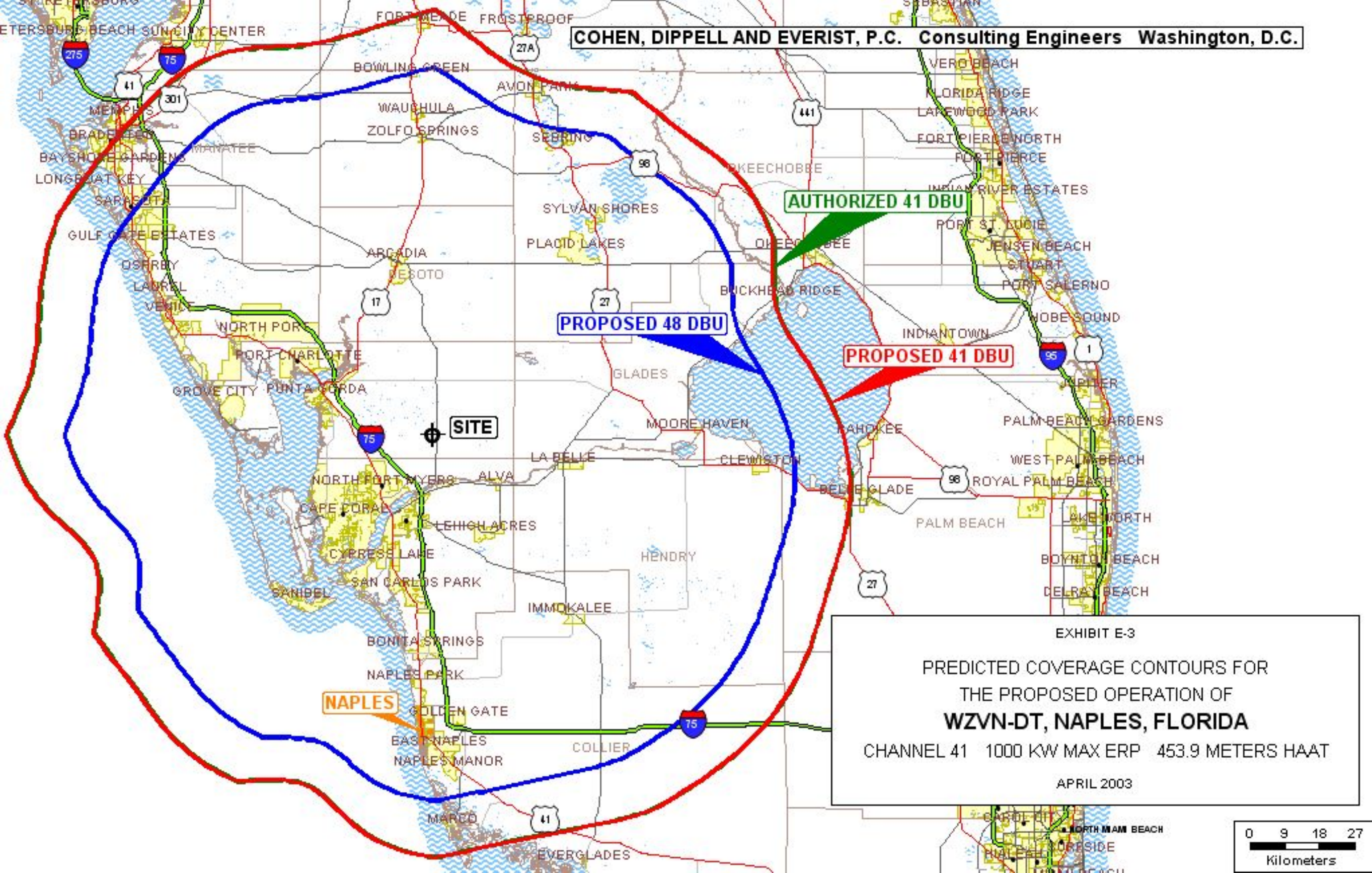
Type:	ATW14H3H-41	
Directivity:	Numeric	dBd
Main Lobe:	26.90	(14.30)
Horizontal:	13.08	(11.17)
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	41	
Location:	Ft. Myers, FL.	





TABULATED DATA FOR ELEVATION PATTERN
TYPE : ATW14H3H-41

Angle Field dB -5 To 10 In 0.25 Increments	Angle Field dB 10 To 90 In 0.5 Increments	Angle Field dB	Angle Field dB
-5.00 0.138 -17.22	8.75 0.076 -22.41	35.00 0.027 -31.37	62.50 0.075 -22.45
-4.75 0.125 -18.08	9.00 0.055 -25.19	35.50 0.023 -32.69	63.00 0.063 -24.05
-4.50 0.107 -19.40	9.25 0.047 -26.58	36.00 0.014 -37.08	63.50 0.050 -26.02
-4.25 0.106 -19.52	9.50 0.059 -24.52	36.50 0.018 -34.70	64.00 0.039 -28.18
-4.00 0.124 -18.10	9.75 0.082 -21.71	37.00 0.030 -30.54	64.50 0.031 -30.12
-3.75 0.154 -16.26	10.00 0.100 -20.03	37.50 0.033 -29.74	65.00 0.027 -31.40
-3.50 0.176 -15.11	10.50 0.095 -20.49	38.00 0.025 -32.15	65.50 0.025 -31.90
-3.25 0.175 -15.12	11.00 0.050 -26.02	38.50 0.014 -37.08	66.00 0.025 -32.15
-3.00 0.160 -15.90	11.50 0.059 -24.55	39.00 0.021 -33.60	66.50 0.024 -32.51
-2.75 0.141 -16.99	12.00 0.095 -20.48	39.50 0.032 -29.98	67.00 0.022 -33.15
-2.50 0.142 -16.95	12.50 0.087 -21.22	40.00 0.034 -29.47	67.50 0.020 -34.02
-2.25 0.183 -14.75	13.00 0.055 -25.21	40.50 0.026 -31.57	68.00 0.018 -35.04
-2.00 0.235 -12.59	13.50 0.066 -23.65	41.00 0.019 -34.33	68.50 0.016 -35.92
-1.75 0.273 -11.27	14.00 0.084 -21.47	41.50 0.024 -32.32	69.00 0.015 -36.36
-1.50 0.291 -10.71	14.50 0.067 -23.44	42.00 0.031 -30.03	69.50 0.015 -36.36
-1.25 0.281 -11.03	15.00 0.034 -29.40	42.50 0.031 -30.09	70.00 0.015 -36.25
-1.00 0.266 -11.49	15.50 0.046 -26.65	43.00 0.023 -32.69	70.50 0.015 -36.25
-0.75 0.300 -10.46	16.00 0.058 -24.79	43.50 0.014 -37.33	71.00 0.015 -36.48
-0.50 0.391 -8.16	16.50 0.035 -29.09	44.00 0.017 -35.60	71.50 0.014 -37.02
-0.25 0.538 -5.38	17.00 0.008 -42.27	44.50 0.023 -32.58	72.00 0.013 -37.79
0.00 0.697 -3.14	17.50 0.044 -27.21	45.00 0.024 -32.54	72.50 0.011 -38.86
0.25 0.834 -1.58	18.00 0.053 -25.60	45.50 0.016 -36.03	73.00 0.010 -40.00
0.50 0.942 -0.52	18.50 0.033 -29.66	46.00 0.003 -51.70	73.50 0.009 -40.92
0.75 0.989 -0.10	19.00 0.016 -35.92	46.50 0.011 -38.86	74.00 0.009 -41.31
1.00 0.991 -0.08	19.50 0.036 -28.78	47.00 0.022 -33.31	74.50 0.009 -41.11
1.25 0.927 -0.66	20.00 0.041 -27.66	47.50 0.025 -32.04	75.00 0.009 -40.54
1.50 0.827 -1.65	20.50 0.030 -30.37	48.00 0.021 -33.47	75.50 0.010 -39.91
1.75 0.691 -3.21	21.00 0.029 -30.75	48.50 0.012 -38.13	76.00 0.011 -39.41
2.00 0.547 -5.24	21.50 0.038 -28.29	49.00 0.008 -42.27	76.50 0.011 -39.02
2.25 0.418 -7.57	22.00 0.036 -28.85	49.50 0.015 -36.42	77.00 0.011 -38.86
2.50 0.319 -9.93	22.50 0.026 -31.63	50.00 0.021 -33.51	77.50 0.011 -38.94
2.75 0.274 -11.25	23.00 0.033 -29.58	50.50 0.022 -33.15	78.00 0.011 -39.09
3.00 0.255 -11.87	23.50 0.045 -27.01	51.00 0.019 -34.56	78.50 0.011 -39.41
3.25 0.244 -12.25	24.00 0.044 -27.23	51.50 0.015 -36.36	79.00 0.010 -40.00
3.50 0.225 -12.96	24.50 0.040 -28.05	52.00 0.017 -35.55	79.50 0.009 -40.54
3.75 0.196 -14.18	25.00 0.062 -24.11	52.50 0.021 -33.47	80.00 0.009 -41.11
4.00 0.167 -15.55	25.50 0.100 -20.04	53.00 0.024 -32.54	80.50 0.008 -41.62
4.25 0.153 -16.33	26.00 0.129 -17.80	53.50 0.022 -33.00	81.00 0.008 -42.05
4.50 0.149 -16.53	26.50 0.138 -17.18	54.00 0.018 -34.66	81.50 0.008 -42.27
4.75 0.149 -16.52	27.00 0.125 -18.04	54.50 0.017 -35.55	82.00 0.008 -42.27
5.00 0.144 -16.86	27.50 0.095 -20.44	55.00 0.021 -33.68	82.50 0.008 -42.27
5.25 0.126 -18.01	28.00 0.062 -24.17	55.50 0.027 -31.34	83.00 0.008 -42.05
5.50 0.103 -19.76	28.50 0.045 -26.97	56.00 0.032 -30.03	83.50 0.008 -41.94
5.75 0.086 -21.34	29.00 0.043 -27.31	56.50 0.032 -29.87	84.00 0.008 -41.72
6.00 0.082 -21.73	29.50 0.039 -28.18	57.00 0.030 -30.57	84.50 0.008 -41.51
6.25 0.093 -20.65	30.00 0.032 -29.98	57.50 0.028 -30.90	85.00 0.009 -41.31
6.50 0.103 -19.78	30.50 0.030 -30.43	58.00 0.035 -29.19	85.50 0.009 -41.11
6.75 0.102 -19.84	31.00 0.031 -30.17	58.50 0.048 -26.39	86.00 0.009 -41.01
7.00 0.093 -20.61	31.50 0.026 -31.70	59.00 0.064 -23.92	86.50 0.009 -40.92
7.25 0.080 -21.94	32.00 0.019 -34.42	59.50 0.079 -22.09	87.00 0.009 -40.92
7.50 0.072 -22.85	32.50 0.022 -33.35	60.00 0.090 -20.90	87.50 0.009 -40.82
7.75 0.078 -22.11	33.00 0.026 -31.77	60.50 0.097 -20.26	88.00 0.009 -40.82
8.00 0.090 -20.96	33.50 0.023 -32.62	61.00 0.098 -20.14	88.50 0.009 -40.82
8.25 0.095 -20.44	34.00 0.019 -34.38	61.50 0.095 -20.48	89.00 0.009 -40.82
8.50 0.092 -20.73	34.50 0.023 -32.88	62.00 0.087 -21.25	89.50 0.009 -40.92



PRELIMINARY SPECIFICATION FOR ANDREW BROADBAND HORIZONTALLY POLARIZED PANEL ARRAY ANTENNA

ELECTRICAL CHARACTERISTICS:

CHANNEL:	15 41 20 (ALTERNATE)
FREQUENCY RANGE:	Channel 15 476 to 482 MHz Channel 41 632 to 638 MHz Channel 20 506 to 512 MHz
AZIMUTH PATTERN NUMBER:	CH15AZ-H-BID-P4X CH41AZ-H-BID-P4X CH20AZ-H-BID-P4X
ELEVATION PATTERN NUMBER:	ABBP14H3-15 ABBP14H3-41 ABBP14H3-20
AZIMUTH DIRECTIVITY:	15: 2.10 (3.22 dB) 41: 2.00 (3.01 dB) 20: 2.05 (3.12 dB)
ELEVATION DIRECTIVITY:	15: 21.80 (13.38 dBd) 41: 26.90 (14.30 dBd) 20: 23.90 (13.78 dBd)
PEAK POWER GAIN:	15: 45.78 (16.61 dBd) 41: 53.80 (17.31 dBd) 20: 48.99 (16.90 dBd)
GAIN AT HORIZONTAL:	15: 29.92 (14.76 dBd) 41: 26.18 (14.18 dBd) 20: 30.48 (14.84 dBd)
ELECTRICAL BEAM TILT:	0.75 Degrees
POWER HANDLING:	22 kW Average Power, 8VSB Digital per Channel*
INPUT TYPE:	7-3/16 inch EIA, 75 ohm
VSWR (MAXIMUM):	1.10 Over Each 6 MHz Channel

***THE ANTENNA DESIGN IS NOT INTENDED FOR SIMULTANEOUS 3 CHANNEL OPERATION BUT FOR THE EVENTUAL CHANGE OVER OF CHANNEL 41 TO CHANNEL 20**



Andrew Corporation
10500 W. 153rd Street
Orland Park, Illinois U.S.A. 60462

LJS052101-889 Rev. C -2-

PRELIMINARY SPECIFICATION FOR ANDREW BROADBAND HORIZONTALLY POLARIZED PANEL ARRAY ANTENNA

MECHANICAL CHARACTERISTICS:

MOUNTING CONFIGURATION: <i>*(Tower Interface supplied and installed by others.)</i>	Top Mount*	
HEIGHT OF ANTENNA:	54.1 feet	
HEIGHT OF CENTER OF PRESSURE (B):	27.05 feet	
HEIGHT OF CENTER OF RADIATION:	28.9 feet	
OVERALL HEIGHT (A): (Includes one 3.3 foot Lightning Rods)	57.4 feet	
DEICING:	Radome Enclosure	
RADOME COLOR:	WHITE (standard)	
CLIMBING DEVICE:	Internal climbing Ladder	
Weight (with Radome)	10,100 lbs.	
WINDLOAD DATA: (with Radome)	SHEAR:	16,335 lbs.
	OVERTURNING MOMENT:	465,000 lbs.-ft.
ANTENNA AREA: (with Radome)	C _A A _F : 225.0 square feet	
Shear Below Tower Top: (due to main power splitters)	1,560 lbs.	CaA _f : 20.0 square feet

This antenna is designed to be supported by a structure that can resist the antenna base reactions and which provides a support that is rigid in the three translational and three rotational degrees of freedom.

1 Calculated weight is based on the **PRELIMINARY** design of the antenna. The actual weight of the antenna will be within "10% of the calculated weight. The actual weight will be given in the technical manual that accompanies the antenna. This figure is for the antenna only and does not include the antenna input section.

2 Based on a wind speed of **105 miles per hour (MPH)***, a height above average terrain (**HAAT**) of **1,550 feet**, and a height above ground level (**HAGL**) of **1,549 feet** per **EIA/TIA-222-F**.

****County is within 100 miles from hurricane oceanline. Tabulated values of basic wind speed have been adjusted in accordance with ASCE 7-88 to obtain 50-year recurrence intervals.***

NOTE: Localized conditions may require higher wind speed specifications than TIA/EIA specifications. Check with local authorities to verify wind speed requirements.



Broadcast Antenna System

Power Analysis

WBBH-DT Channel 41
Ft. Myers, FL
Type: ABBP14H3-HTP4X-15/41

ANTENNA PARAMETERS:

Azimuth Directivity:

Hor Pol: 2.00 (3.01 dBd)

Elevation Directivity:

Hor Pol: 26.90 (14.30 dBd)

TRANSMISSION LINE:

VERTICAL RUN:

Type: 7-3/16" 75 Ohm MACXLine®

Length: 1500 ft.

Attenuation: 0.0940 dB/100 ft.

HORIZONTAL RUN:

Type: 7-3/16" 75 Ohm MACXLine®

Length: 75 ft.

Attenuation: 0.0940 dB/100 ft.

Efficiency: 71.11%

ERP:

kW: 1000

dBk: 30.00

POWER GAIN:

Ratio: 53.80

dBd: 17.31

ANTENNA INPUT:

kW: 18.59

dBk: 12.69

LINE LOSS:

kW: 7.55

dB: 1.480

TRANSMITTER POWER:

kW: 26.14

dBk: 14.17



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LJS052101-889 Rev. C -5-

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing	Typed or Printed Title of Person Signing
Signature	Date

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name	Relationship to Applicant (e.g., Consulting Engineer)	
Signature	Date	
Mailing Address		
City	State or Country (if foreign address)	ZIP Code
Telephone Number (include area code)	E-Mail Address (if available)	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III-D - DTV Engineering

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

- (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☐ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.

- ☐ Yes ☐ No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☐ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☐ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☐ Yes ☐ No

SECTION III-D DTV Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV _____ Analog TV, if any _____

2. Zone: ☐ I ☐ II ☐ III

3. Antenna Location Coordinates: (NAD 27)

_____ ° _____ ' _____ " ☐ N ☐ S Latitude
_____ ° _____ ' _____ " ☐ E ☐ W Longitude

4. Antenna Structure Registration Number: _____

☐ Not applicable ☐ FAA Notification Filed with FAA

5. Antenna Location Site Elevation Above Mean Sea Level: _____ meters

6. Overall Tower Height Above Ground Level: _____ meters

7. Height of Radiation Center Above Ground Level: _____ meters

8. Height of Radiation Center Above Average Terrain: _____ meters

9. Maximum Effective Radiated Power (average power): _____ kW

10. Antenna Specifications:

a.

Manufacturer	Model
--------------	-------

b. Electrical Beam Tilt: _____ degrees ☐ Not Applicable

c. Mechanical Beam _____ degrees toward azimuth _____ degrees True ☐ Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c).

Exhibit No.

d. Polarization: ☐ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

Rotation: _____ ° ☐ No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") ☐ Yes ☐ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

- a. If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.