

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
WEIGEL BROADCASTING CO.
STATION WFBT-CA
CHICAGO, ILLINOIS
CH 23 47.5 KW (MAX-DA)

Engineering Statement

The engineering exhibit of which this statement is part was prepared on behalf of Weigel Broadcasting Co., licensee of LPTV station WFBT-CA Chicago, Illinois. Currently station WFBT-CA operates on channel 23 employing effective radiated power (ERP) of 19.62 kilowatts toward the radio horizon, and a maximum peak power of 150 kilowatts. Weigel proposes to increase the ERP of station WFBT-CA to a maximum of 47.5 kilowatts toward the radio horizon, and a peak maximum of 363 kilowatts utilizing the existing antenna system, which will be relocated on the Sears building roof. Waiver of 47 CFR 74.735 and 73.6007 is requested with respect to the peak power to be employed. Continued waiver of 47 CFR 74.705(b)(5) is also requested.

Chicago, Illinois
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Proposed Operation

Prior to construction of new monopoles on the Sears Building, available antenna space was for all practical purposes non-existent. In order to overcome the shortage of space, the channel 23 LPTV antenna was placed within the aperture of the existing WCIU-TV channel 26 antenna, also licensed to Weigel. Antennas are designed to operate in a "clear" area, free from nearby reradiating objects but this was not possible for the channel 23 antenna. However, now that "clear" space is available on the northwest monopole, mounting of the antenna there, even through approximately 50 feet lower in height, is expected to improve the impedance characteristics of the antenna and to provide for a directional antenna pattern which more closely resembles the theoretical pattern, thereby improving the reach and quality of coverage.

The existing antenna currently used by WFBT-CA will be employed for the proposed operation. The antenna is a Dielectric type TMP22-M/CP which has an electrical beam tilt of 2.3 degrees and mechanical tilt of 0.6 degree at a true bearing of 290 degrees. Information regarding the antenna is included in the four sheets of Figure 2. The antenna radiation toward the radio horizon is plotted and tabulated on the two sheets of Figure 3.

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Coverage Contours

The existing and proposed WFBT-CA 74 dBu contours are shown on the attached Figure 1. The existing 74-dBu contour provides service to 3,264,370 persons, which will be increased to 3,801,815 persons, a gain of 537,445 persons, by implementation of higher ERP. As will be noted also, the proposed 74-dBu land area coverage increases within the Chicago city limits from 79.3 to 83.3 percent.

Allocation Conditions

Use of higher power by WFBT-CA will not result in interference to any full service analog stations, Class A television stations, translator stations or to any existing DTV allotments, DTV stations or DTV applications. This determination was made using the Commission's "LP1" study program and the Longley Rice propagation method as described in *OET Bulletin No. 69*. Figure 4 (Sheet 1) shows the Grade B contours of cochannel stations WIFR(TV) and WNDY-TV and the interfering contour from the WFBT-CA proposal. No prohibited contour overlap occurs.

A study was made to determine whether the proposed WFBT-CA power increase would have a preclusive effect on other analog or digital television stations.

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There are no digital stations or allotments on channels 22, 23 or 24, sufficiently close to Chicago to warrant concern. With regard to full service analog stations, three channel 23 stations required study to determine whether the proposal of WFBT-CA would have a preclusive impact on possible improvement by those stations. The stations are WIFR Freeport, IL, WBUI Decatur, IL and WNDY-TV Marion, IN. Additionally, two full power Chicago stations, WCIU-TV on channel 26 (owned by Weigel) and WYCC on channel 20 require study regarding possible intermodulation interference. (See 47 CFR 74.705(b)(5)).

With regard to WIFR, as will be noted from Figure 4, the 46 dBu interfering contour already overlaps the protected 74 dBu contour of WFBT-CA; therefore a power increase by WIFR in the direction of Chicago would not be permitted.

With respect to WBUI, which holds a construction permit to change transmitting facilities to a new location, with ERP maintained at 1950 kilowatts but with HAAT increased from 314 to 405 meters, there is no possibility of preclusion by the WFBT-CA proposal even if the ERP for WBUI was increased to the maximum power of 5,000 kilowatts. Figure 4 shows the predicted WBUI 46 dBu interfering contour based on use of the CP site with assumed maximum permitted power and proposed HAAT.

Chicago, Illinois
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Station WNDY operates on channel 23 employing ERP of 5,000 kilowatts with HAAT of 294 meters. The 46 dBu interfering contour produced by this facility does not overlap the WFBT-CA proposed 74 dBu contour as shown on Figure 4.

The proposal of WFBT-CA has no impact on possible improvement in the facilities of WIFR, WBUI and WNDY-TV.

Intermodulation interference was discussed in extensive detail when an application to move W23AT (now WFBT-CA) to downtown Chicago was filed with the FCC, File No. BPTTL-19910502MA, and is incorporated by reference. The possibility of intermodulation interference to WCIU on channel 26 and WYCC on channel 20 was discussed, and a waiver of the provisions of 47 CFR 74.705(b)(5) was requested and ultimately granted by the FCC. Continued waiver of that provision of the rules is requested as it is believed that no intermodulation interference will occur, even with the higher power proposed by WFBT-CA. In the unlikely event that such interference is observed, it can be eliminated by usual remedies, such as insertion of a filter in the malfunctioning receiving equipment. Weigel recognizes its responsibility to eliminate any objectionable interference which may be created by the proposed operation of WFBT-CA.

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Request for Waiver of 47 CFR 74.735

It is proposed to operate WFBT-CA with maximum peak ERP increased from 150 kilowatts to 363 kilowatts. In support of the waiver of Section 74.735, which limits the ERP of LPTV stations operating on channels 14 through 69 to 150 kilowatts, the following facts are to be considered:

1. The increase in peak power by WFBT-CA will use the television spectrum more efficiently and effectively without creating interference to any other analog or digital television station.
2. The antenna will be placed in a "clear" area, where superior antenna characteristics would be expected.
3. Potential interference by the proposed operation is less than would be expected from a station operating with an ERP of 150 kilowatts directed toward the radio horizon. The proposed WFBT-CA operation directs a maximum of 47.5 kilowatts toward the radio horizon.
4. Additional service will be provided to over one-half million persons as a result of the power increase by WFBT-CA. In addition, the area currently receiving a 74-dBu signal will enjoy enhanced signal strength due to the power increase.
5. The additional power will result in increased coverage of the principal community, Chicago, Illinois.
6. As set out in pages 3, 4 and 5 of this statement, increase in the power of WFBT-CA, as requested here, will have no deleterious effect on other television services or the FCC's allotment policies.

Chicago, Illinois
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- a. Since WFBT-CA is a protected Class A station, no new LPTV station proposing to operate on Channel 23 could be established to serve the area which will be served by WFBT-CA with its proposed power. Rather any such new proposal would either cause prohibited interference to WFBT-CA or to analog full power TV station WIFR-TV in Freeport, Illinois.
- b. Similarly, the increase in peak power of WFBT-CA would not limit the operation of or prejudice modification of existing or proposed analog full power TV station facilities because they are otherwise precluded from making such changes because of other technical or legal restrictions or can maximize their power without regard to the WFBT-CA proposed operation.

Accordingly, denial of this waiver request would only deprive the Chicago area of additional service from WFBT-CA with no other off-setting public benefit in the full and efficient use of the Channel 23 spectrum.

Radiation Exposure Considerations

The WFBT-CA antenna is located on the northwest monopole on the roof of the Sears building in Chicago, in a very complex radiofrequency environment. The building roof is inaccessible to the general public. After commissioning of the proposed facility, power density measurements will be taken to determine the contribution of the WFBT-CA

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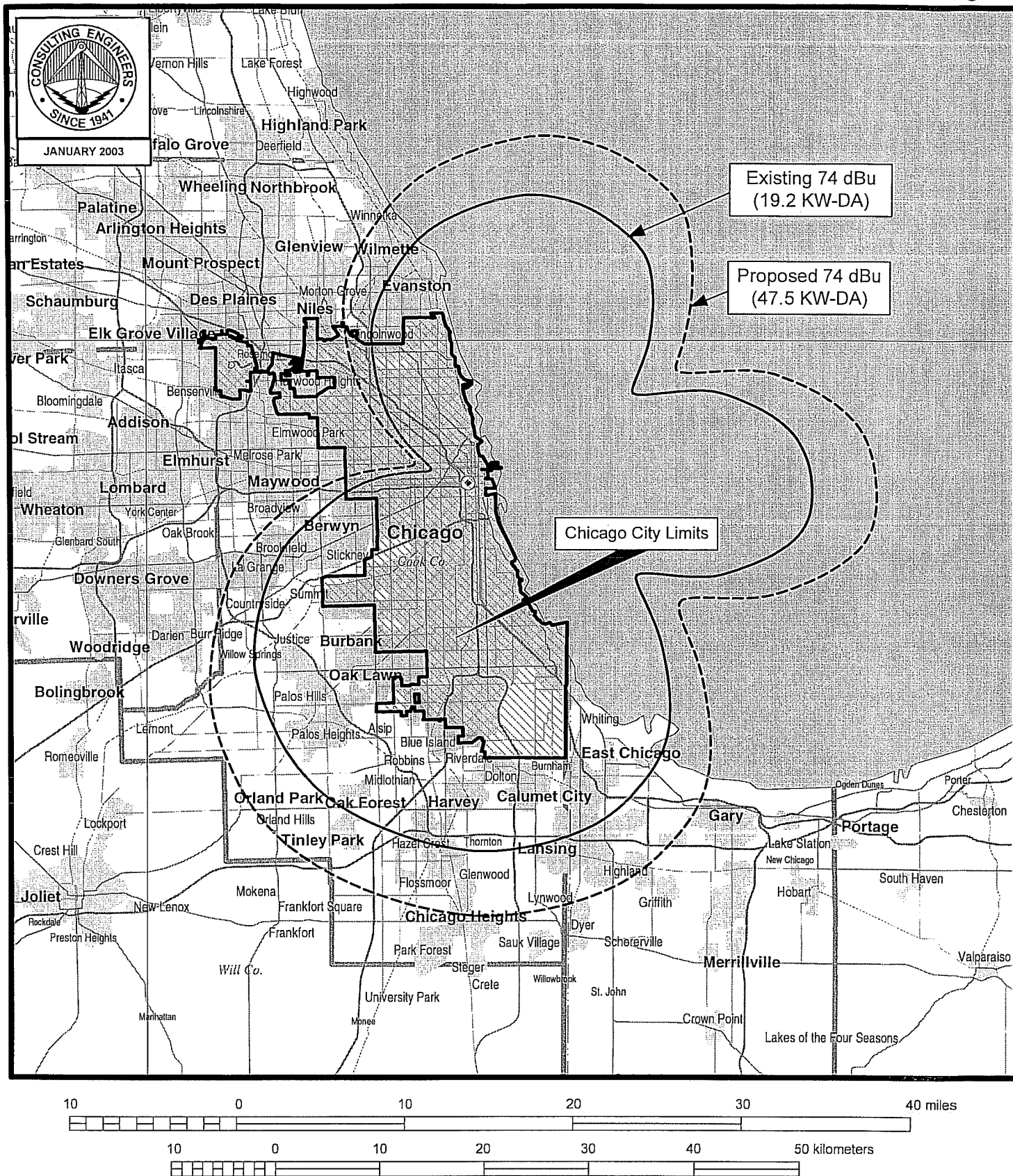
facility to the current radiation levels on the building roof. These measurements will be supplied to the Commission at the time of filing an application for license.

Weigel continues to adhere to the commitment to protect workers from exposure from radiofrequency radiation in excess of the FCC guideline value.



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February 5, 2003



PREDICTED 74 dBu COVERAGE CONTOURS

LPTV STATION WFBT-CA
CHICAGO, ILLINOIS
CHANNEL 23

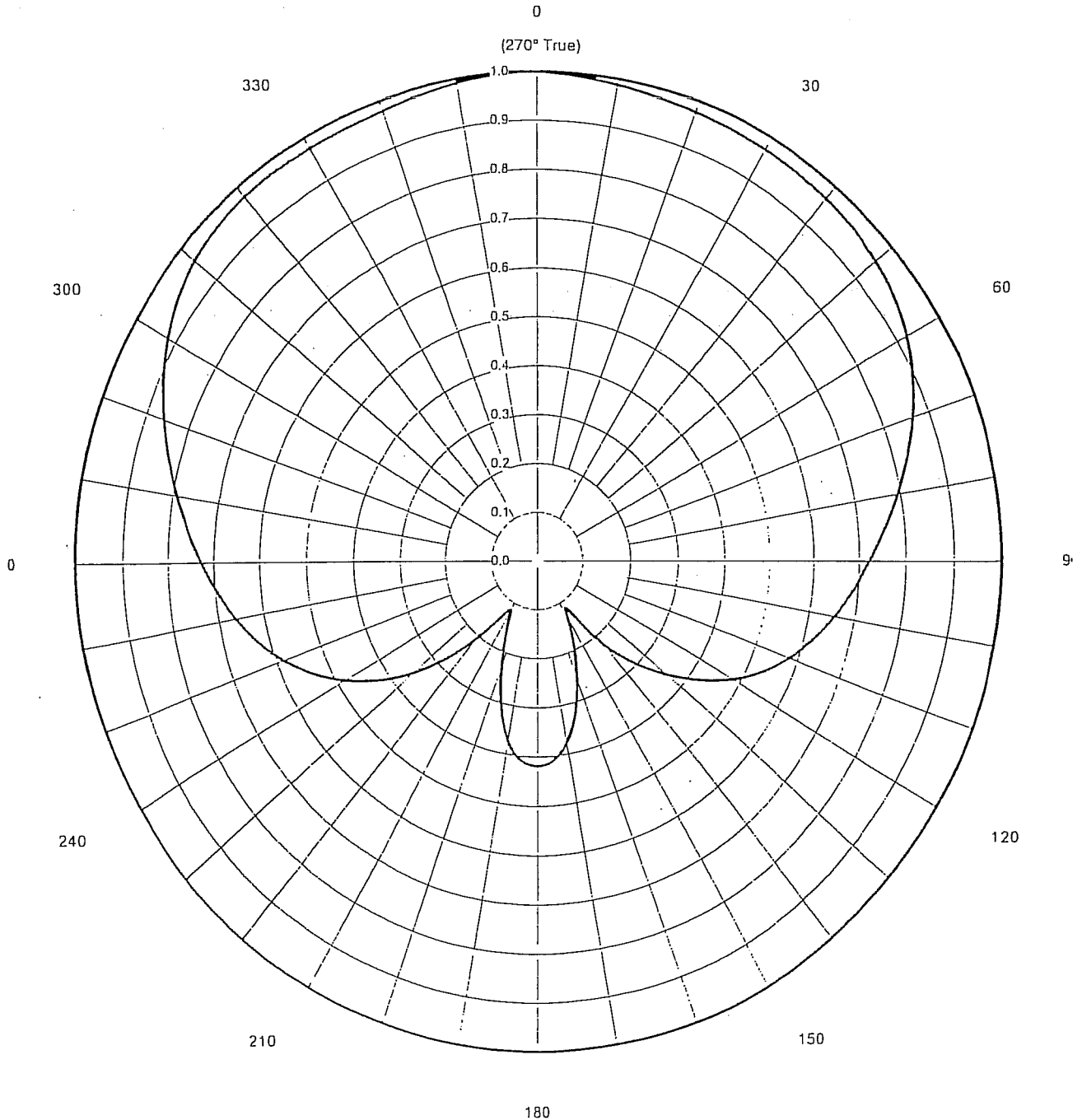


AUGUST 2002

Gain 1.90 (2.79 dB)
Calculated / Measured Calculated

AZIMUTH PATTERN

Frequency 527.00 MHz
Drawing # M



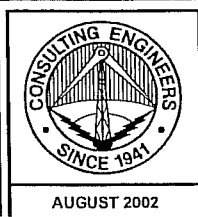
AZIMUTH RELATIVE FIELD PATTERN

WEIGEL BROADCASTING CO.
LPTV STATION WFBT-CA
CHICAGO, ILLINOIS

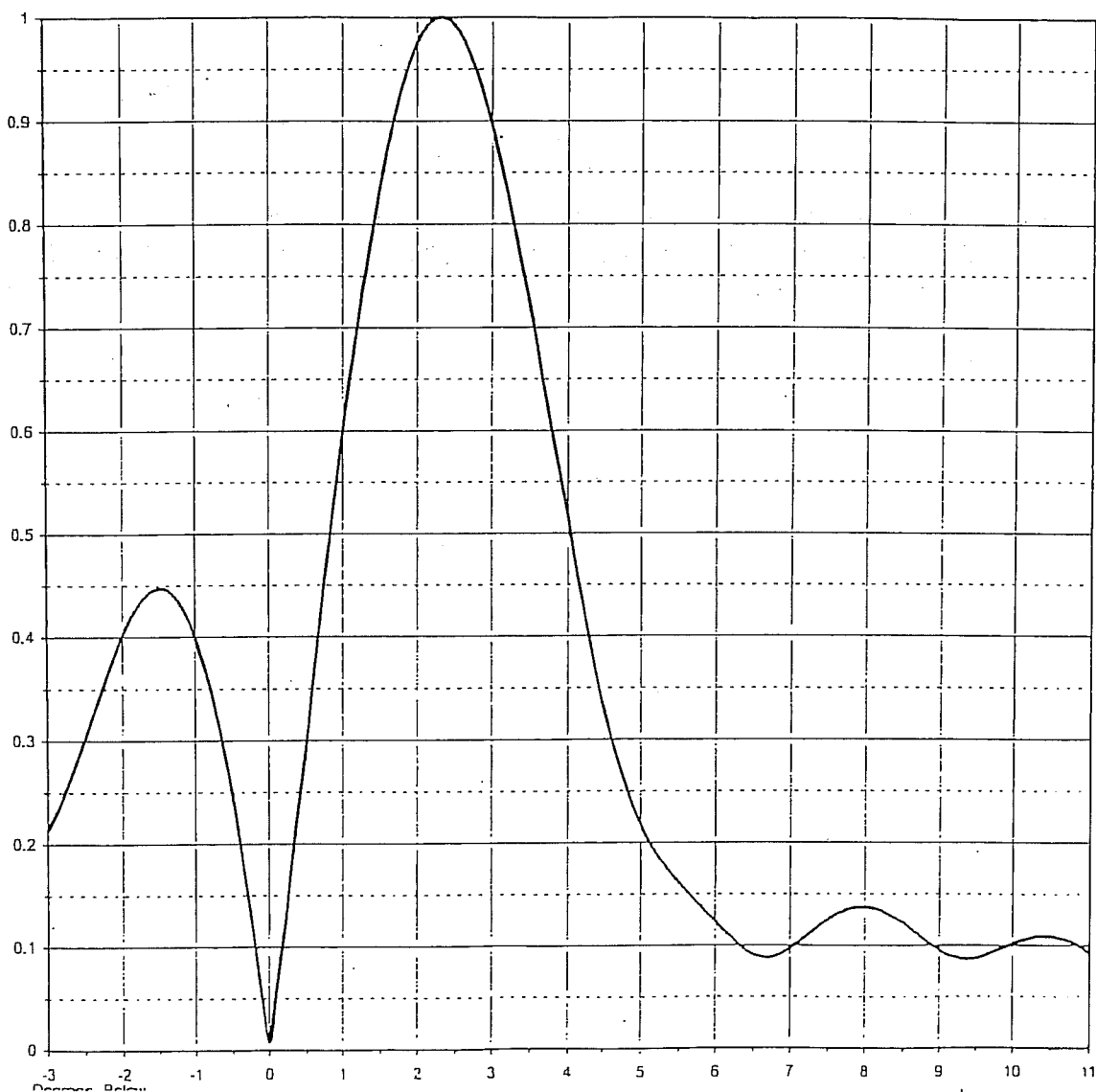
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.964	90	0.722	135	0.297	180	0.419	225	0.279
1	0.999	46	0.963	91	0.715	136	0.283	181	0.419	226	0.294
2	0.998	47	0.961	92	0.709	137	0.269	182	0.418	227	0.309
3	0.997	48	0.960	93	0.702	138	0.255	183	0.416	228	0.324
4	0.995	49	0.958	94	0.695	139	0.239	184	0.413	229	0.338
5	0.994	50	0.956	95	0.689	140	0.223	185	0.409	230	0.352
6	0.993	51	0.954	96	0.682	141	0.206	186	0.405	231	0.366
7	0.991	52	0.951	97	0.675	142	0.187	187	0.399	232	0.380
8	0.990	53	0.948	98	0.669	143	0.166	188	0.392	233	0.394
9	0.989	54	0.945	99	0.662	144	0.146	189	0.383	234	0.408
10	0.988	55	0.942	100	0.655	145	0.129	190	0.374	235	0.421
11	0.986	56	0.939	101	0.648	146	0.118	191	0.363	236	0.434
12	0.985	57	0.935	102	0.641	147	0.115	192	0.351	237	0.447
13	0.984	58	0.931	103	0.634	148	0.117	193	0.337	238	0.459
14	0.983	59	0.926	104	0.626	149	0.124	194	0.323	239	0.471
15	0.981	60	0.922	105	0.619	150	0.132	195	0.309	240	0.483
16	0.980	61	0.917	106	0.611	151	0.142	196	0.294	241	0.495
17	0.979	62	0.912	107	0.604	152	0.152	197	0.278	242	0.506
18	0.978	63	0.906	108	0.596	153	0.163	198	0.263	243	0.517
19	0.977	64	0.901	109	0.588	154	0.174	199	0.248	244	0.528
20	0.976	65	0.895	110	0.579	155	0.186	200	0.232	245	0.538
21	0.975	66	0.889	111	0.571	156	0.199	201	0.218	246	0.548
22	0.975	67	0.883	112	0.562	157	0.212	202	0.204	247	0.558
23	0.974	68	0.877	113	0.553	158	0.225	203	0.190	248	0.568
24	0.973	69	0.870	114	0.544	159	0.239	204	0.177	249	0.577
25	0.973	70	0.864	115	0.534	160	0.253	205	0.165	250	0.586
26	0.972	71	0.857	116	0.524	161	0.267	206	0.153	251	0.594
27	0.972	72	0.850	117	0.514	162	0.280	207	0.142	252	0.603
28	0.972	73	0.843	118	0.504	163	0.294	208	0.132	253	0.611
29	0.971	74	0.836	119	0.493	164	0.307	209	0.123	254	0.619
30	0.971	75	0.829	120	0.482	165	0.320	210	0.118	255	0.627
31	0.971	76	0.822	121	0.471	166	0.333	211	0.117	256	0.634
32	0.971	77	0.815	122	0.459	167	0.345	212	0.118	257	0.642
33	0.971	78	0.807	123	0.448	168	0.356	213	0.123	258	0.649
34	0.971	79	0.800	124	0.436	169	0.366	214	0.130	259	0.656
35	0.970	80	0.793	125	0.424	170	0.376	215	0.139	260	0.663
36	0.970	81	0.785	126	0.412	171	0.384	216	0.149	261	0.670
37	0.970	82	0.778	127	0.399	172	0.392	217	0.161	262	0.676
38	0.969	83	0.771	128	0.387	173	0.398	218	0.175	263	0.683
39	0.969	84	0.764	129	0.374	174	0.404	219	0.189	264	0.690
40	0.968	85	0.757	130	0.361	175	0.408	220	0.204	265	0.696
41	0.968	86	0.750	131	0.349	176	0.412	221	0.219	266	0.702
42	0.967	87	0.743	132	0.336	177	0.415	222	0.234	267	0.709
43	0.966	88	0.736	133	0.323	178	0.417	223	0.249	268	0.715
44	0.965	89	0.729	134	0.310	179	0.418	224	0.264	269	0.721

AZIMUTH RELATIVE FIELD TABULATION

WEIGEL BROADCASTING CO.
LPTV STATION WFBT-CA
CHICAGO, ILLINOIS

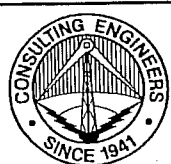


RMS Gain at Main Lobe	19.00 (12.79 dB)	Beam Tilt	2.30 deg
RMS Gain at Horizontal		Frequency	527.00 MHz
Calculated / Measured	Calculated	Drawing #	22Z19023



ELEVATION RELATIVE FIELD PATTERN

WEIGEL BROADCASTING CO.
LPTV STATION WFBT-CA
CHICAGO, ILLINOIS



AUGUST 2002

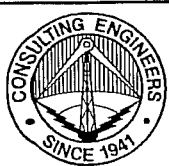
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.200	2.4	0.998	10.6	0.109	30.5	0.061	51.0	0.065	71.5	0.039
-9.5	0.215	2.6	0.980	10.8	0.105	31.0	0.080	51.5	0.055	72.0	0.042
-9.0	0.211	2.8	0.945	11.0	0.097	31.5	0.093	52.0	0.050	72.5	0.045
-8.5	0.191	3.0	0.894	11.5	0.064	32.0	0.097	52.5	0.050	73.0	0.048
-8.0	0.169	3.2	0.830	12.0	0.026	32.5	0.090	53.0	0.053	73.5	0.051
-7.5	0.162	3.4	0.757	12.5	0.039	33.0	0.075	53.5	0.058	74.0	0.053
-7.0	0.170	3.6	0.678	13.0	0.064	33.5	0.055	54.0	0.064	74.5	0.054
-6.5	0.177	3.8	0.595	13.5	0.070	34.0	0.036	54.5	0.071	75.0	0.054
-6.0	0.183	4.0	0.514	14.0	0.056	34.5	0.026	55.0	0.078	75.5	0.054
-5.5	0.197	4.2	0.436	14.5	0.035	35.0	0.024	55.5	0.083	76.0	0.052
-5.0	0.221	4.4	0.365	15.0	0.034	35.5	0.021	56.0	0.088	76.5	0.050
-4.5	0.236	4.6	0.304	15.5	0.048	36.0	0.015	56.5	0.090	77.0	0.048
-4.0	0.224	4.8	0.255	16.0	0.052	36.5	0.018	57.0	0.089	77.5	0.045
-3.5	0.195	5.0	0.217	16.5	0.041	37.0	0.031	57.5	0.086	78.0	0.041
-3.0	0.213	5.2	0.189	17.0	0.020	37.5	0.046	58.0	0.080	78.5	0.038
-2.8	0.243	5.4	0.169	17.5	0.017	38.0	0.055	58.5	0.074	79.0	0.034
-2.6	0.282	5.6	0.153	18.0	0.035	38.5	0.057	59.0	0.068	79.5	0.030
-2.4	0.325	5.8	0.138	18.5	0.045	39.0	0.052	59.5	0.062	80.0	0.027
-2.2	0.367	6.0	0.123	19.0	0.045	39.5	0.043	60.0	0.059	80.5	0.023
-2.0	0.403	6.2	0.108	19.5	0.040	40.0	0.034	60.5	0.057	81.0	0.020
-1.8	0.430	6.4	0.095	20.0	0.040	40.5	0.032	61.0	0.057	81.5	0.017
-1.6	0.445	6.6	0.089	20.5	0.046	41.0	0.036	61.5	0.057	82.0	0.014
-1.4	0.446	6.8	0.090	21.0	0.049	41.5	0.041	62.0	0.057	82.5	0.011
-1.2	0.430	7.0	0.098	21.5	0.044	42.0	0.040	62.5	0.056	83.0	0.009
-1.0	0.398	7.2	0.109	22.0	0.033	42.5	0.035	63.0	0.056	83.5	0.007
-0.8	0.348	7.4	0.121	22.5	0.021	43.0	0.026	63.5	0.055	84.0	0.005
-0.6	0.281	7.6	0.130	23.0	0.019	43.5	0.015	64.0	0.055	84.5	0.004
-0.4	0.198	7.8	0.136	23.5	0.022	44.0	0.008	64.5	0.055	85.0	0.003
-0.2	0.102	8.0	0.137	24.0	0.019	44.5	0.011	65.0	0.056	85.5	0.002
0.0	0.008	8.2	0.134	24.5	0.008	45.0	0.016	65.5	0.057	86.0	0.001
0.2	0.123	8.4	0.126	25.0	0.010	45.5	0.023	66.0	0.058	86.5	0.001
0.4	0.245	8.6	0.116	25.5	0.026	46.0	0.033	66.5	0.058	87.0	0.000
0.6	0.368	8.8	0.105	26.0	0.038	46.5	0.047	67.0	0.058	87.5	0.000
0.8	0.488	9.0	0.095	26.5	0.042	47.0	0.063	67.5	0.056	88.0	0.000
1.0	0.603	9.2	0.089	27.0	0.040	47.5	0.078	68.0	0.053	88.5	0.000
1.2	0.708	9.4	0.087	27.5	0.033	48.0	0.091	68.5	0.050	89.0	0.000
1.4	0.800	9.6	0.090	28.0	0.027	48.5	0.098	69.0	0.046	89.5	0.000
1.6	0.877	9.8	0.093	28.5	0.025	49.0	0.100	69.5	0.042	90.0	0.000
1.8	0.936	10.0	0.099	29.0	0.026	49.5	0.096	70.0	0.039		
2.0	0.977	10.2	0.105	29.5	0.031	50.0	0.087	70.5	0.037		
2.2	0.997	10.4	0.109	30.0	0.043	50.5	0.076	71.0	0.037		

ELEVATION RELATIVE FIELD TABULATION

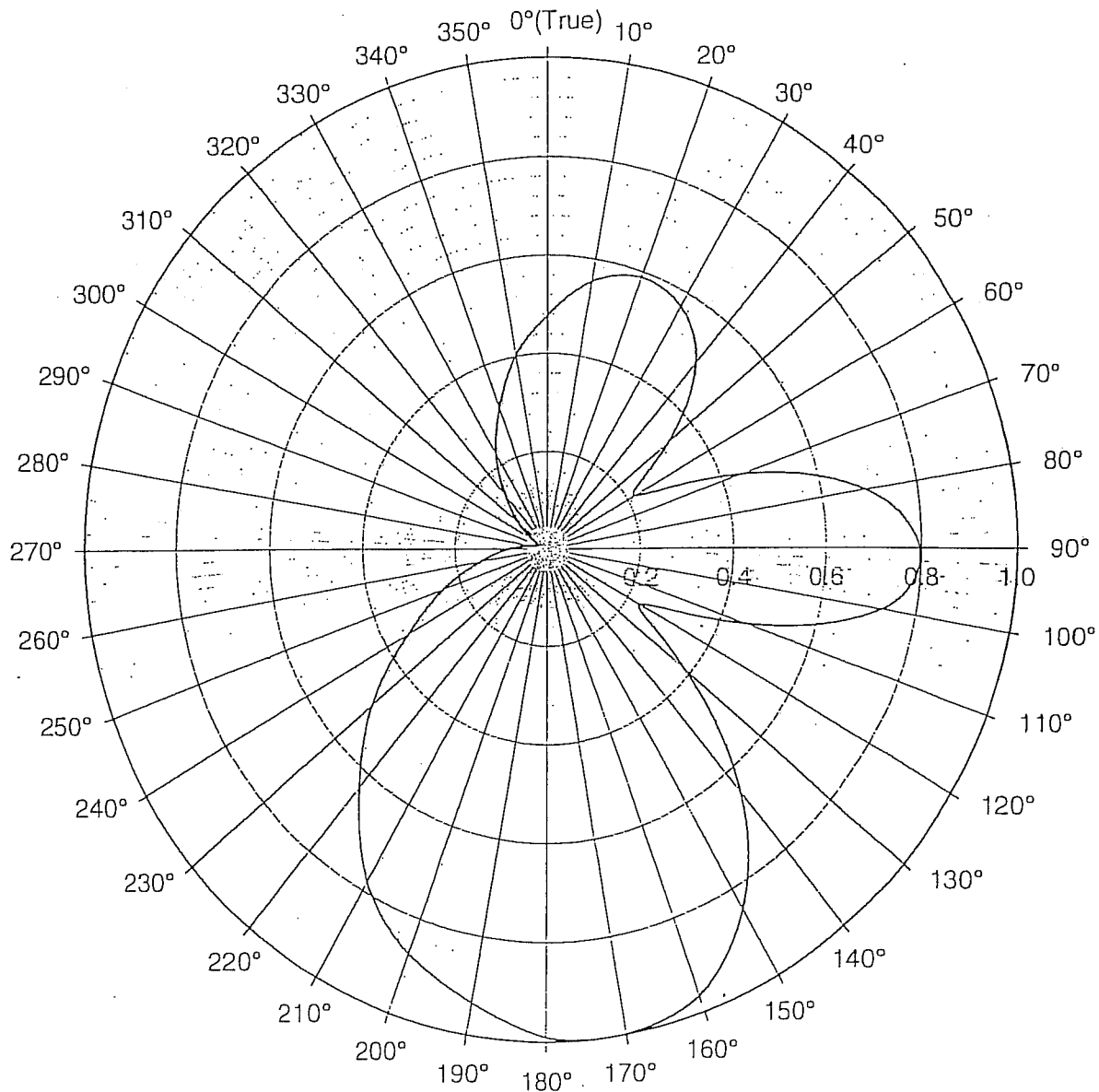
WEIGEL BROADCASTING CO.

LPTV STATION WFBT-CA

CHICAGO, ILLINOIS

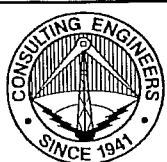


AUGUST 2002



RELATIVE FIELD PATTERN TOWARD RADIO HORIZON

WEIGEL BROADCASTING CO.
LPTV STATION WFBT-CA
CHICAGO, ILLINOIS



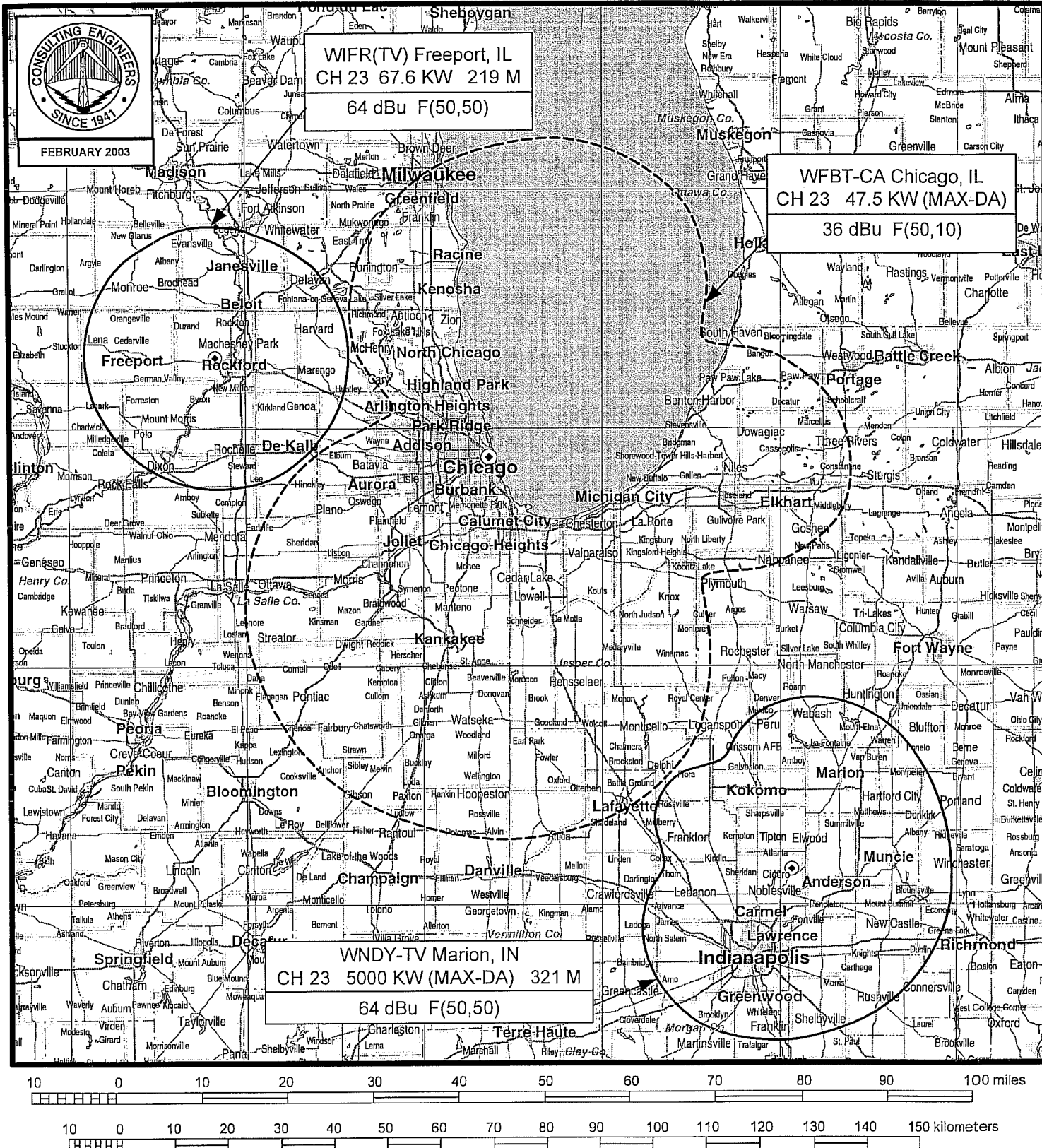
AUGUST 2002

Azimuth	Relative Field	Azimuth	Relative Field
0	0.477	180	0.992
10	0.555	190	0.936
20	0.589	200	0.874
30	0.570	210	0.780
40	0.493	220	0.635
50	0.336	230	0.496
60	0.218	240	0.348
70	0.444	250	0.240
80	0.692	260	0.148
90	0.796	270	0.086
100	0.727	280	0.038
110	0.454	290	0.022
120	0.229	300	0.037
130	0.387	310	0.083
140	0.648	320	0.143
150	0.847	330	0.226
160	0.968	340	0.308
170	1.000	350	0.403

Azimuths Relative to True North
 Radiation Toward the Radio Horizon
 0.6° Mechanical Beam Tilt at 290° True
 2.3° Electrical Beam Tilt

RELATIVE FIELD TABLE TOWARD RADIO HORIZON

WEIGEL BROADCASTING CO.
 LPTV STATION WFBT-CA
 CHICAGO, ILLINOIS

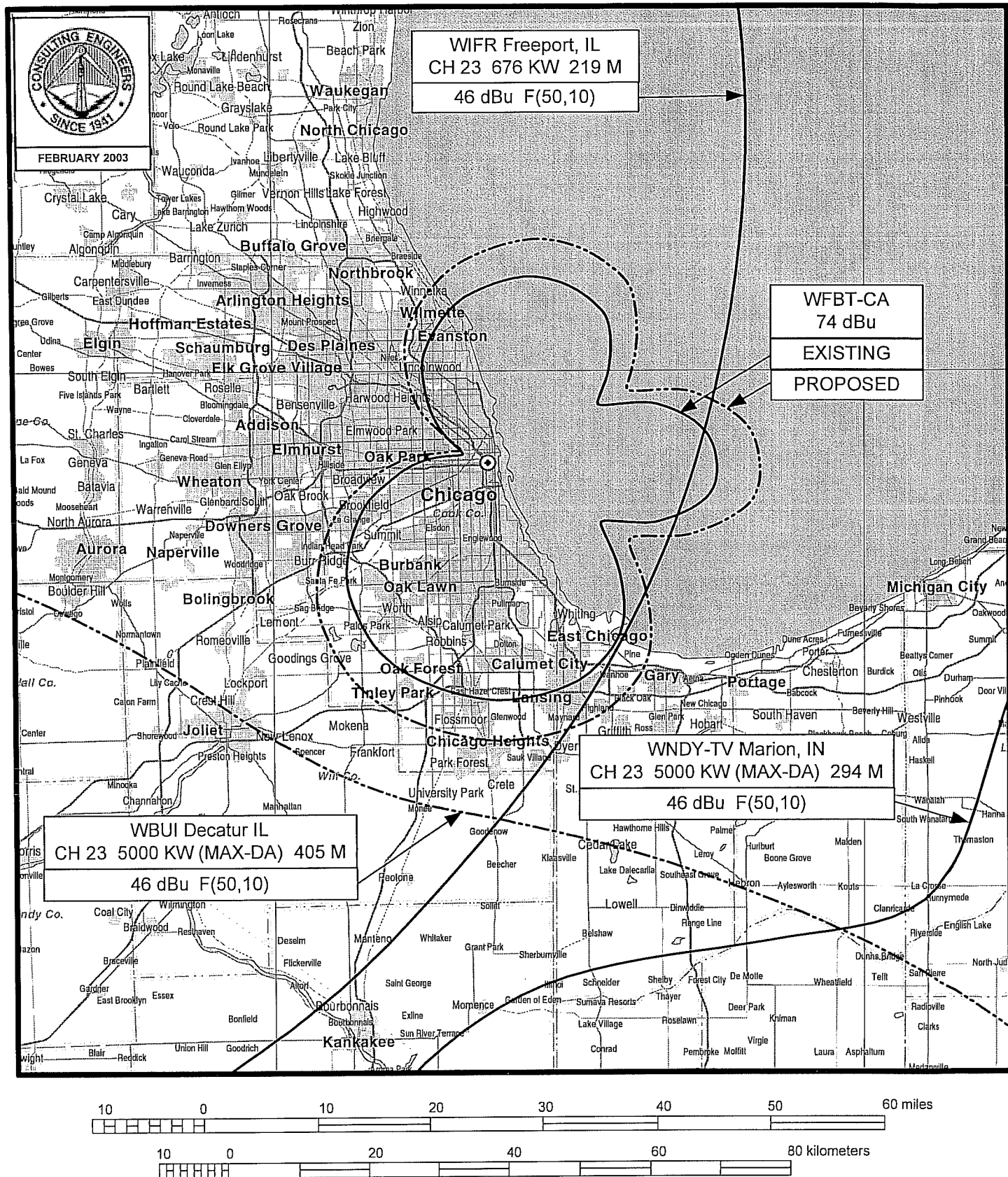


ALLOCATION STUDY

LPTV STATION WFBT-CA

CHICAGO, ILLINOIS

CHANNEL 23



ALLOCATION STUDY

LPTV STATION WFTB-CA

CHICAGO, ILLINOIS

CHANNEL 23