



6340 Sky Creek Drive, Sacramento, CA 95828
P.O. Box 292880, Sacramento, CA 95829-2880

(916) 383-1177 Fax: (916) 383-1182

DATE: October 27, 2004

FM ANTENNA FOR:

STATION: WXEL

LOCATION: Palm Beach, FL

MODEL NUMBER: JCPD-3/3(9)DA

FREQUENCY & ERP: 90.7 MHz, 38 kW (H), 32.2 kW (V)

ANTENNA INPUT POWER: 2.82 kW

ANTENNA BOOM HEADING: 42° / 158° / 282.5° T

ANTENNA GAIN: H-pol V-pol

Relative to dipole 13.50 11.55
(dBd) 11.3 10.6

AZIMUTH PATTERN RMS:

Composite: 0.52

H-pol: 0.47

V-pol: 0.51

CERTIFICATION:

This certification, along with the accompanying antenna specification sheet, antenna mounting sketches, and azimuth and elevation patterns, certifies the construction and measurement of the *JAMPRO* FM CP antenna to the station's requirements, as measured at the *JAMPRO* antenna site in Sacramento, California. The following is an outline of construction methods, pattern measurements, installation requirements and recommended maintenance.

CONSTRUCTION:

Three standard model JCPD antenna panels were mounted on a model tower in an array configuration. These panels were fed by a corporate feed style power divider mounted inside the tower. Connections between the power divider and each panel were made with air dielectric coaxial cables of appropriate lengths. The panel positions and the lengths of the cables were adjusted in order to meet the pattern and gain requirements.

MEASUREMENT:

The full scale antenna was mounted on an exact duplicate of it's final support at the station. We were careful to duplicate conduits, cables and anything peculiar to this mounting. This was then placed on a turntable at the *JAMPRO* antenna range. This directional antenna was used for receiving the radiation from a transmitting antenna that is elevated 25 feet above ground and located at a distance of 7000 feet. This transmitting antenna is capable of transmitting either horizontal or vertical polarization. The frequency of the signal generator was accurately set to station frequency by use of a frequency counter. A spectrum analyzer was used to continuously measure field strength as the antenna was rotated. Field strength at each azimuth was then plotted using a Scientific Atlanta plotter.

MEASUREMENT EQUIPMENT:

Model 3000 Wavetec Signal Generator, S/N 66479

Model 8591E Hewlett-Packard Spectrum Analyzer, S/N 3308A01312, calibrated 1/16/2003

Tuned cavity dipole transmitting antenna

Scientific Atlanta Plotter

INSTALLATION:

The antenna must be installed in exactly the manner in which it was measured at the factory. This is shown in detail on the antenna mounting sketch; including the azimuth bearing of the main boom(s) of the elements. The boom(s) must be verified by a surveyor at the site when installation is being completed. Good engineering practice should be followed in any details not covered by specific instructions.

MAINTENANCE:

Annual or regular inspection should be made on an antenna system. At this time, tightness of U-bolts or other fastenings should be routinely checked. Any deterioration of the antenna due to lightning or other causes should be promptly repaired.

CONCLUSION:

In the development of this pattern, *JAMPRO* Antennas, Inc., observed known requirements of the FCC, as stated on the station construction permit.

Gain figures and required input power to achieve station ERP, as well as other details, are to be found on the first and accompanying pages.

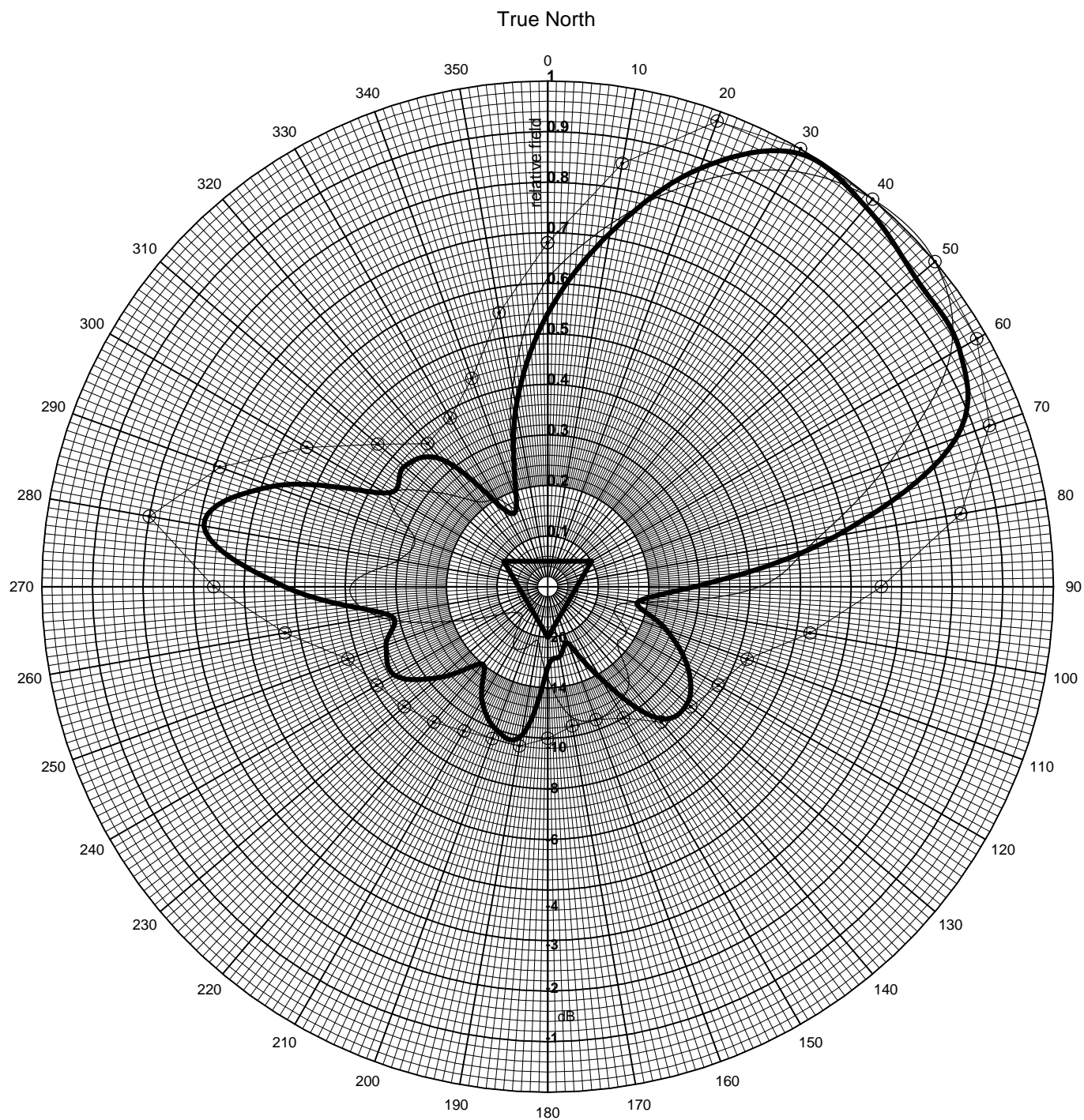
This certification, with its calculations, were performed by Vyacheslav M. Bulkin, PhD, Antenna Engineer, *JAMPRO* Antennas, Inc.

EXECUTED THIS 27th DAY OF OCTOBER, 2004

A handwritten signature in black ink, reading "Vyacheslav Bulkin", is written over a horizontal line. A vertical line extends downwards from the end of the signature.

BY: _____

Vyacheslav M. Bulkin, PhD, Antenna Engineer, *JAMPRO* Antennas, Inc.



Azimuth Plane Pattern

Customer: WXEL

Date: April 2, 2003

Frequency 90.7 MHz

Type Number: JCPD-3/3(9)DA

Measured Pattern :

- V-pol, - H-pol, -o- limits



6340 Sky Creek Drive, Sacramento, CA 95828
P.O. Box 292880, Sacramento, CA 95829-2880

(916) 383-1177 Fax: (916) 383-1182

WXEL

ERP = 38 kW (H) / 32.2 kW (V)

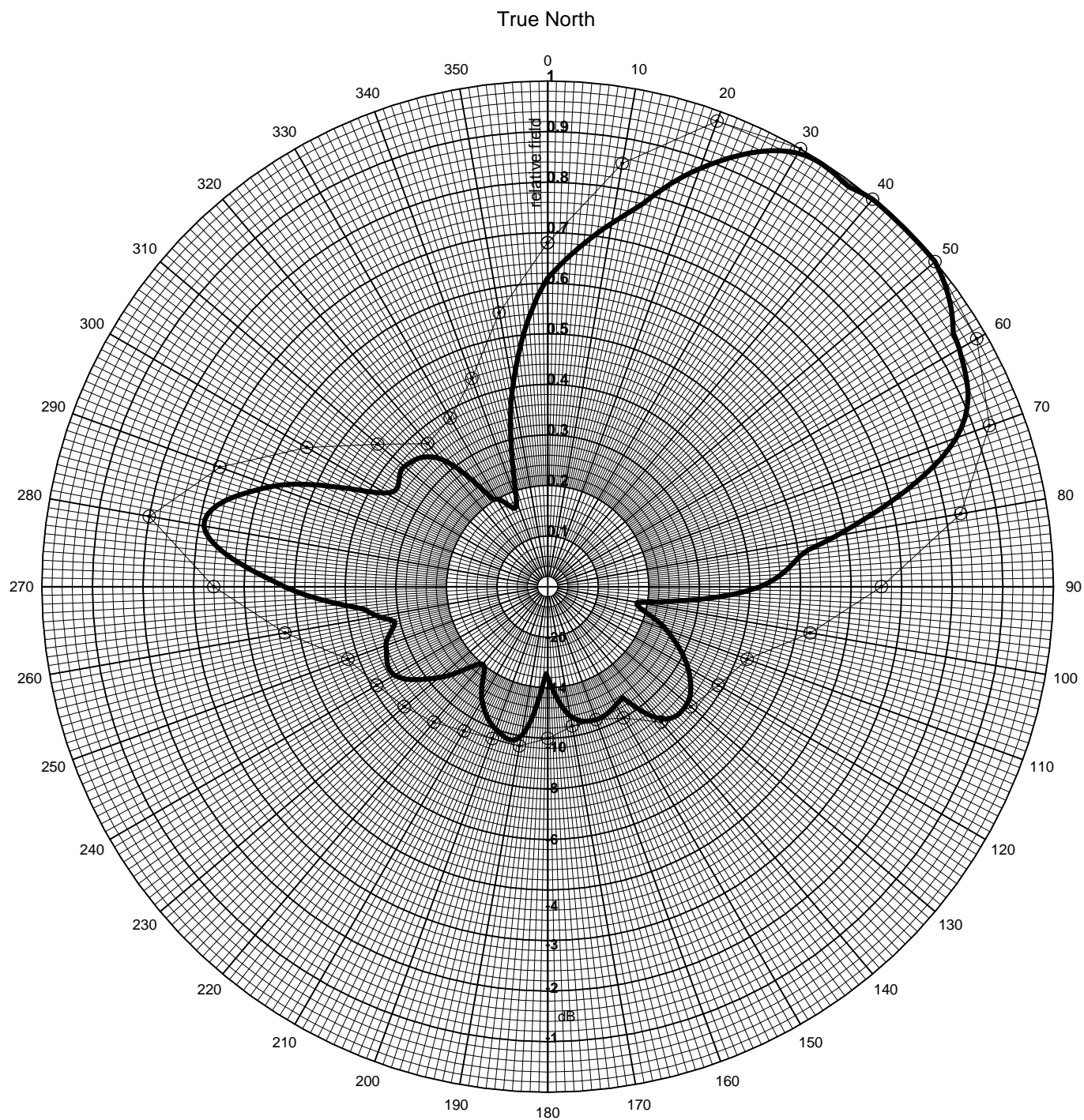
JCPD-3/3(9) DA

TABULATION OF MEASURED RELATIVE FIELD

Horizontal Polarization

Vertical Polarization

<u>BEARING</u>	<u>FIELD</u>	<u>ERP(kW)</u>	<u>FIELD</u>	<u>ERP(kW)</u>
0	0.610	14.14	0.540	9.48
10	0.730	20.25	0.710	16.39
20	0.850	27.46	0.880	25.18
30	0.950	34.30	0.990	31.87
40	1.000	38.00	0.980	31.23
50	1.000	38.00	0.950	29.35
60	0.920	32.16	0.940	28.73
70	0.720	19.70	0.860	24.05
80	0.540	11.08	0.580	10.94
90	0.420	6.70	0.290	2.74
100	0.180	1.24	0.180	1.05
110	0.140	0.74	0.250	2.03
120	0.180	1.24	0.320	3.33
130	0.180	1.24	0.360	4.21
140	0.250	2.38	0.340	3.76
150	0.270	2.77	0.210	1.43
160	0.280	2.98	0.120	0.47
170	0.260	2.57	0.140	0.64
180	0.180	1.24	0.160	0.83
190	0.110	0.46	0.300	2.93
200	0.130	0.64	0.300	2.93
210	0.140	0.69	0.260	2.20
220	0.080	0.24	0.200	1.30
230	0.080	0.24	0.280	2.55
240	0.110	0.46	0.350	3.98
250	0.200	1.52	0.340	3.76
260	0.340	4.40	0.320	3.33
270	0.390	5.78	0.520	8.79
280	0.300	3.42	0.690	15.49
290	0.280	2.98	0.580	10.94
300	0.360	4.92	0.370	4.45
310	0.290	3.20	0.370	4.45
320	0.220	1.84	0.330	3.54
330	0.200	1.52	0.180	1.05
340	0.180	1.24	0.180	1.05
350	0.400	6.08	0.360	4.21



Azimuth Plane Pattern

Customer: WXEL

Date: April 2, 2003

Frequency 90.7 MHz

Type Number: JCPD-3/3(9)DA

Measured Pattern :

- Composite H & V, -o- limits



6340 Sky Creek Drive, Sacramento, CA 95828
P.O. Box 292880, Sacramento, CA 95829-2880

(916) 383-1177 Fax: (916) 383-1182

WXEL

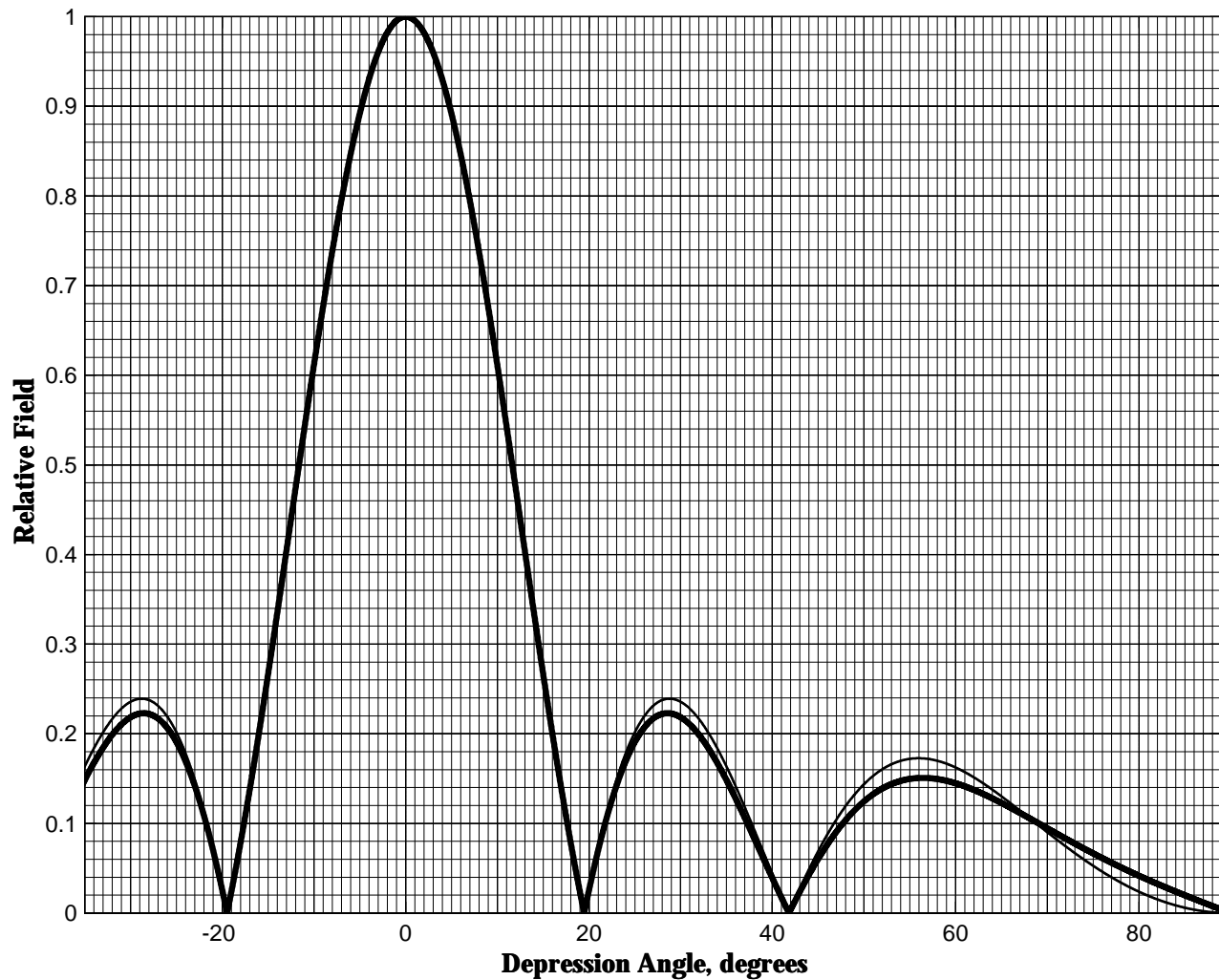
JCPD-3/3(9) DA

TABULATION OF RELATIVE FIELD

COMPOSITE MEASURED PATTERN (H & V)

<u>BEARING</u>	<u>FIELD</u>	<u>ERP(kW)</u>	<u>dBk</u>
0	0.61	14.14	11.50
10	0.73	20.25	13.06
20	0.88	29.42	14.69
30	0.99	37.24	15.71
40	1.00	38.00	15.80
50	1.00	38.00	15.80
60	0.94	33.58	15.26
70	0.86	28.10	14.49
80	0.58	12.78	11.07
90	0.42	6.70	8.26
100	0.18	1.24	0.92
110	0.25	2.38	3.76
120	0.32	3.90	5.91
130	0.36	4.92	6.92
140	0.34	4.40	6.43
150	0.27	2.77	4.43
160	0.28	2.98	4.74
170	0.26	2.57	4.09
180	0.18	1.24	0.92
190	0.30	3.42	5.34
200	0.30	3.42	5.34
210	0.26	2.57	4.09
220	0.20	1.52	1.82
230	0.28	2.98	4.74
240	0.35	4.66	6.68
250	0.34	4.40	6.43
260	0.34	4.40	6.43
270	0.52	10.28	10.12
280	0.69	18.09	12.58
290	0.58	12.78	11.07
300	0.37	5.20	7.16
310	0.37	5.20	7.16
320	0.33	4.14	6.17
330	0.20	1.52	1.82
340	0.18	1.24	0.92
350	0.40	6.08	7.84

© JAMPRO Antennas, Inc., Sacramento, California, USA, www.jampro.com, Ph.(916)383-1177, Fax (916)383-1182



Elevation Plane Pattern

Customer: WXEL

Date: April 2, 2003

Frequency 90.7 MHz

Type Number: JCPD-3/3(9)DA

Legend: - V-pol, - H-pol



6340 Sky Creek Drive, Sacramento, California 95828
P.O. Box 292880, Sacramento, California 95829-2880

(916) 383-1177 FAX (916) 383-1182

Customer: WXEL

Date: April 2, 2003

Frequency: 90.7 MHz

Type Number: JCPD-3/3(9)

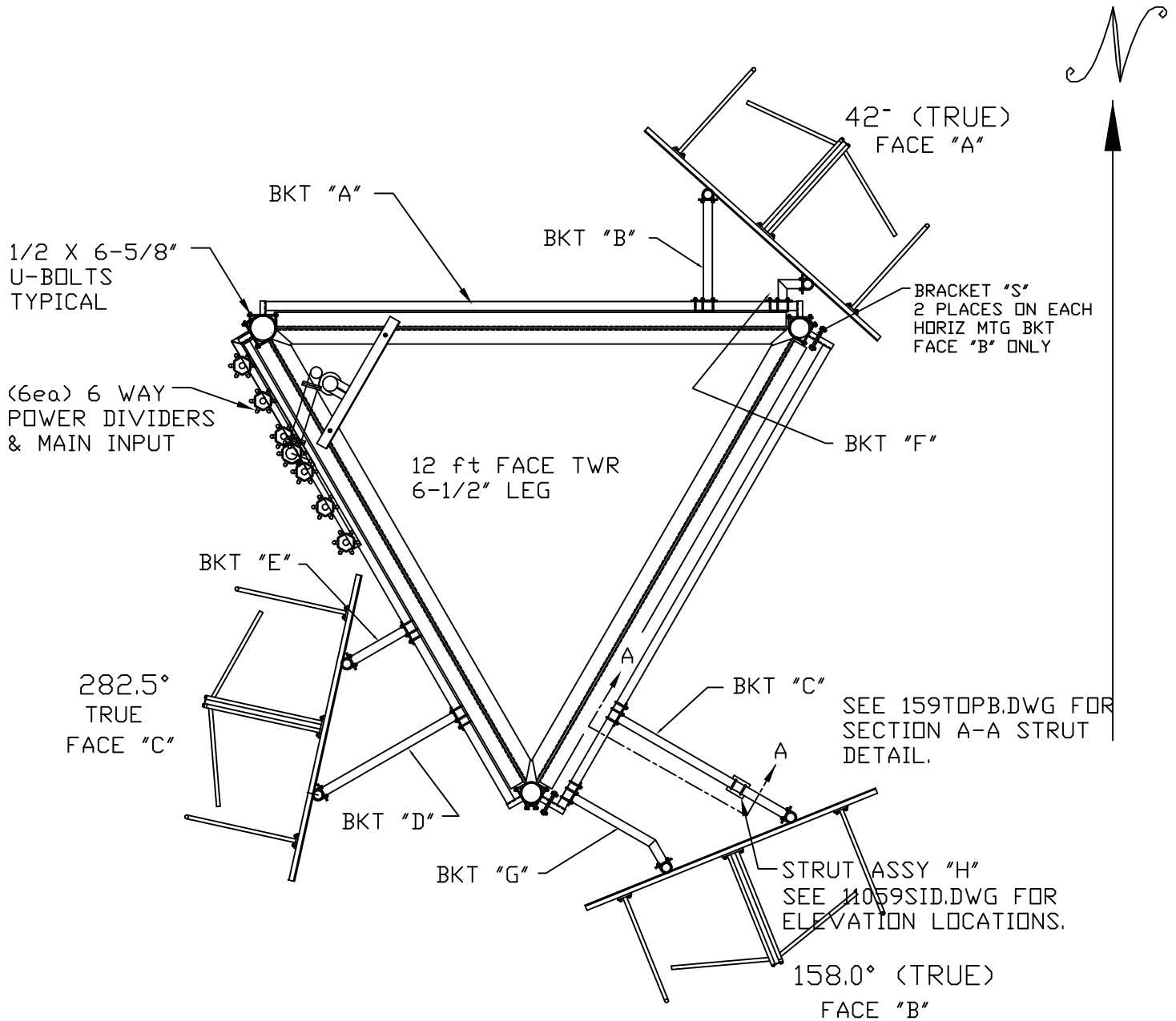
Elevation Pattern Tabulation of Relative Field

<u>Elevation</u> <u>angle</u>	<u>H-pol</u>	<u>V-pol</u>	<u>Elevation</u> <u>angle</u>	<u>H-pol</u>	<u>V-pol</u>	<u>Elevation</u> <u>angle</u>	<u>H-pol</u>	<u>V-pol</u>
10	0.617	0.612	-24	0.178	0.169	-58	0.170	0.150
9	0.682	0.677	-25	0.202	0.191	-59	0.167	0.148
8	0.743	0.738	-26	0.219	0.207	-60	0.162	0.145
7	0.799	0.795	-27	0.231	0.217	-61	0.157	0.141
6	0.850	0.847	-28	0.238	0.222	-62	0.151	0.137
5	0.894	0.892	-29	0.239	0.223	-63	0.145	0.133
4	0.931	0.930	-30	0.236	0.219	-64	0.138	0.128
3	0.961	0.960	-31	0.228	0.211	-65	0.130	0.123
2	0.983	0.982	-32	0.217	0.199	-66	0.122	0.117
1	0.996	0.996	-33	0.202	0.184	-67	0.114	0.112
0	1.000	1.000	-34	0.184	0.167	-68	0.106	0.106
-1	0.996	0.996	-35	0.164	0.148	-69	0.098	0.100
-2	0.983	0.982	-36	0.141	0.128	-70	0.090	0.095
-3	0.961	0.960	-37	0.118	0.106	-71	0.082	0.089
-4	0.931	0.930	-38	0.094	0.084	-72	0.074	0.083
-5	0.894	0.892	-39	0.069	0.061	-73	0.067	0.078
-6	0.850	0.847	-40	0.044	0.039	-74	0.060	0.072
-7	0.799	0.795	-41	0.019	0.017	-75	0.053	0.067
-8	0.743	0.738	-42	0.005	0.004	-76	0.046	0.061
-9	0.682	0.677	-43	0.027	0.024	-77	0.040	0.056
-10	0.617	0.612	-44	0.049	0.043	-78	0.034	0.051
-11	0.550	0.544	-45	0.069	0.061	-79	0.029	0.046
-12	0.481	0.474	-46	0.088	0.077	-80	0.024	0.042
-13	0.411	0.404	-47	0.105	0.091	-81	0.019	0.037
-14	0.341	0.335	-48	0.120	0.104	-82	0.015	0.033
-15	0.272	0.267	-49	0.133	0.115	-83	0.012	0.028
-16	0.206	0.201	-50	0.144	0.125	-84	0.009	0.024
-17	0.142	0.138	-51	0.153	0.133	-85	0.006	0.020
-18	0.081	0.079	-52	0.161	0.139	-86	0.004	0.016
-19	0.025	0.024	-53	0.166	0.144	-87	0.002	0.012
-20	0.027	0.026	-54	0.170	0.148	-88	0.001	0.008
-21	0.073	0.070	-55	0.172	0.150	-89	0.000	0.004
-22	0.114	0.109	-56	0.173	0.151	-90	0.000	0.000
-23	0.149	0.142	-57	0.172	0.151			



6340 Sky Creek Drive, Sacramento, California 95828
P.O. Box 292880, Sacramento, California 95829-2880

(916)383-1177 FAX (916)383-1182



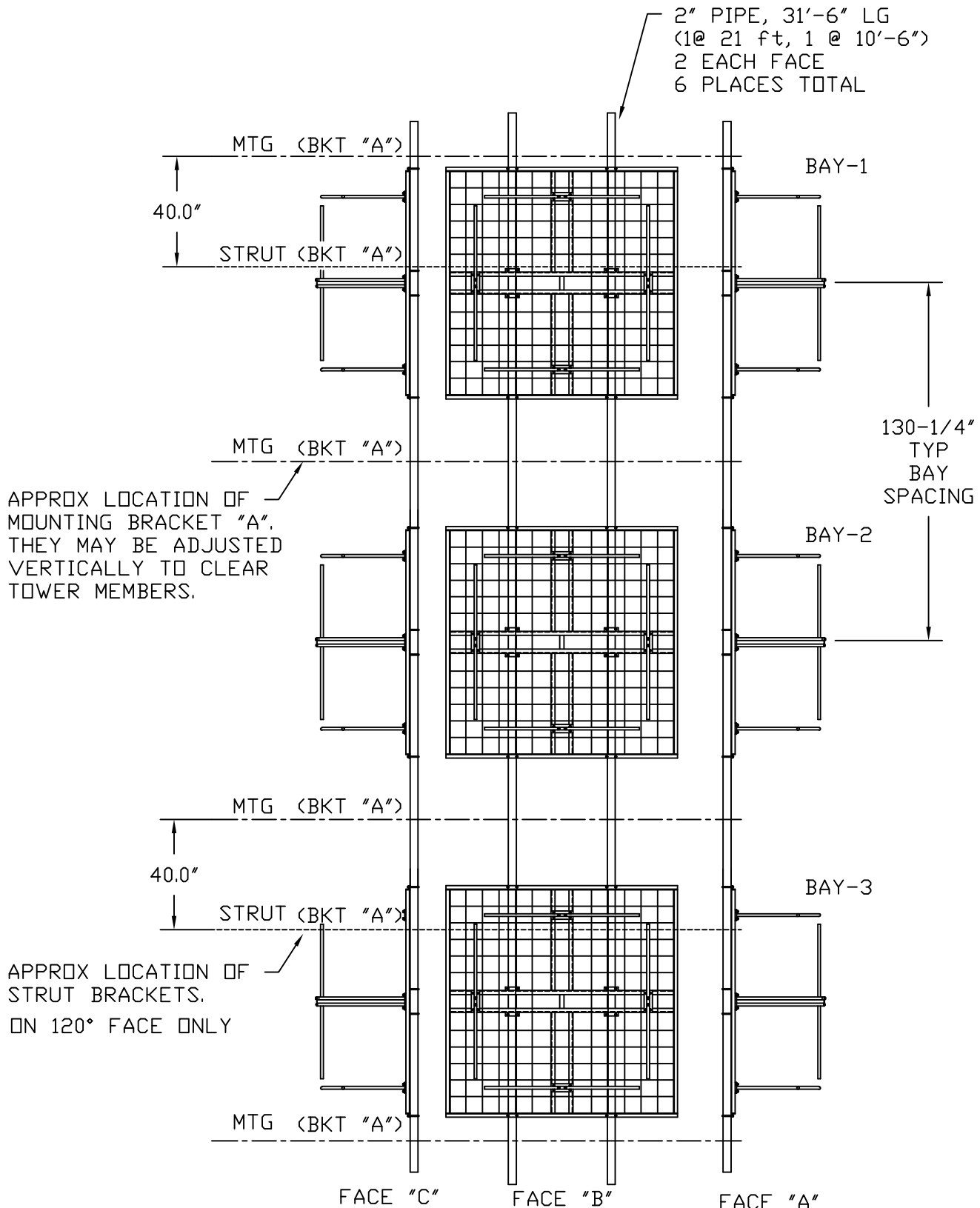
JCPD-3/3 (11059)

REV "C" 2/26/2003
11059TOPC.DWG



6340 Sky Creek Drive, Sacramento, California 95828
P.O. Box 292880, Sacramento, California 95829-2880

(916)383-1177 FAX (916)383-1182



NOTE
FACES C & A
SHOWN ROTATED
FOR CLARITY.

JCPD-3/3 (11059)

REV "A" 11/18/2002
11059SID.DWG

April 16, 2003

This affidavit is in reference to part five of Federal Communications Commission FM Broadcast Station Construction Permit issued to WXEL FM.

Facility ID: 58363

Call Sign: WXEL


Permit File Number: BMPED-20021017AAN

Part five refers to the overseeing, supervision and inspection of the station transmission antenna by a qualified engineer and the qualifications of the approving engineer.

The approving engineer is Gary A. Minker, President, The Radio Works R.F. Consulting. Please see the attached description of Mr. Minkers qualifications.

I hereby certify upon my inspection that the Jampro antenna, Model Number ICPD-3/3(9)DA, has been installed pursuant to Federal Communications Commission Permit issued to WXEL FM, meets all of the manufactures installation specifications and instructions as of this date, April 16, 2003.

Gary A. Minker:


Gary A. Minker, President
The Radio Works R.F. Consulting
9000 Burma Road, Suite 102
Palm Beach Gardens 33403
Ph: 561-881-3063

4/17/2003

GARY ALAN MINKER
RADIO WORKS R.F. CONSULTING.

EDUCATION: McDonogh School, Baltimore, Maryland; University of Miami, Miami, Florida University of Miami (audio training Gusman Theater Studio), Miami, Florida; Palm Beach Junior College (Florida real estate salesman license), West Palm Beach, Florida; and North Technical School (video technical education), West Palm Beach, Florida.

CERTIFICATIONS, ORGANIZATIONS AND PATENTS: Federal Communications Commission, General Radio Telephone, PG-7-13549; Society of Broadcast Engineers, AM, FM, Broadcasting Engineer 2791; National Association of Business and Education Radio (certified technician); Amateur Radio Operator, Extra Class KC-4-UDZ; and patent holder for musical product - Patent Number 4,803,907, second Patent pending on new application as of 4/2000.

PROFESSIONAL EXPERIENCE: Mr. Minker has been actively engaged in the engineering and technical aspects of the broadcast industry in South Florida since 1975. The following is a resume of these activities:

President. The Radio Works R.F. Consulting. (1981 to present)

A consulting firm which offers design and repair services to the fields of broadcast related radio frequency (RF), FM Broadcast and Television antenna and transmission line testing services, audio systems, acoustic treatment and sound reinforcement (public address). These services are offered to the general public in addition to the broadcasting community.

President. Public Address Sound, Inc. (1973 to 1981)

A sound reinforcement contractor which concentrated its services toward live music and theatrical arts. System design services also included fixed base and portable reinforcement systems, repair services primarily geared to support large scale club entertainment systems sized to 20,000 watts.

Chief Engineer. Atlantic Broadcasting Corp. (1985 to 1993)

Engineering manager responsible for the operation and maintenance of a combined AM/FM broadcasting facility in the south Florida area.

Assistant Chief Engineer. (1975 - 1976)

Performed the maintenance and repair duties as Assistant Chief Engineer to south Florida FM radio facility.

Recording Studio Engineer. (1973 - present)
Presently operating as an "on call" mix engineer and repair technician for several south Florida production facilities.

Manager/Assistant Manager. (1981 - 1986)
Service facility management for high volume communications repair and sales organization. Areas of primary responsibility included design and installation of 800 MHz and 900 MHz communications systems and automated paging systems.

Electrician. (1978 - 1982)
Installation of industrial electronics and "heavy" electrical systems for commercial, theatrical and residential facilities.

Electronic Technician (1978 - 1983)
Systems installer and bench repair technician for hospital nurse call system and fire life safety systems.

Bench Repair and Installation Technician (1976 - 1981)
Technician for high end audio systems installation company.

Apprentice Technician. (1969 - 1971)
Local Hi-Fi and television repair shop. Warranty depot for McIntosh Audio Components.

Mr. Minker has a combined experience of 25 years in the management, maintenance and operation of tower facilities running from 1975 at WMYQ in Miami Florida to present day as the President of the Tower Works Inc. and as Radio Works R.F. Consulting.

PM SURVEYING, INC.**PETER J. MOSCHETTO, P.S.M.
PRESIDENT**2501 Bristol Drive
Suite A9
West Palm Beach, FL 33409OFFICE: (561) 478-7764
FAX: (561) 478-1094STATE OF Florida
COUNTY OF PALM BEACH

THE UNDERSIGNED, PETER J. MOSCHETTO, BEING A SURVEYOR DULY LICENSED
BY THE STATE OF FLORIDA, EVIDENCED BY FLORIDA CERTIFICATE NUMBER
4110, CERTIFIES AS FOLLOWS:

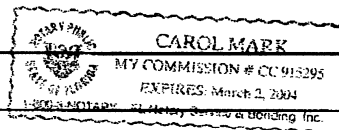
THE THREE DIRECTIONAL ANTENNA PLACEMENT ON THE WPTV TOWER HAS
BEEN ORIENTED TO THE PROPER AZIMUTH.

DATED THIS 7TH DAY OF MARCH 2003
PETER J. MOSCHETTO, P.S.M.
NOTARY PUBLIC IN AND FOR THE STATE AND COUNTY AFORESAID

COMMISSION NUMBER:

MY COMMISSION EXPIRES:

PRINT NOTARY NAME:

Carol Mark