

ENGINEERING EXHIBIT
APPLICATION FOR LICENSE
AND PROOF OF PERFORMANCE
RADIO STATION WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0 KW DA-2

APRIL, 1999

ENGINEERING EXHIBIT
APPLICATION FOR LICENSE AND PROOF OF PERFORMANCE
WQBN, TEMPLE TERRACE, FLORIDA

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FOR
FCC
USE
ONLY

FCC 302-AM
APPLICATION FOR AM
BROADCAST STATION LICENSE

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY

FILE NO.

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)
Radio Tropical, Inc.

MAILING ADDRESS (Line 1) (Maximum 35 characters)
5203 Armenia Ave.

MAILING ADDRESS (Line 2) (Maximum 35 characters)

| | | |
|------------|--|-------------------|
| CITY Tampa | STATE OR COUNTRY (if foreign address) Florida | ZIP CODE 33603 |
|------------|--|-------------------|

| | | |
|--------------------------------------|----------------------|--------------------------------------|
| TELEPHONE NUMBER (include area code) | CALL LETTERS WQBN | OTHER FCC IDENTIFIER (if applicable) |
|--------------------------------------|----------------------|--------------------------------------|

2. A. Is a fee submitted with this application? Yes No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

Governmental Entity Noncommercial educational licenses Other (Please explain):

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

| (A) FEE TYPE CODE | (B) FEE MULTIPLE | (C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A) | FOR FCC USE ONLY |
|-------------------------|---------------------|--|------------------|
| M M R | 0 0 0 1 | \$ 475.00 | |

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

| (A) | (B) | (C) | FOR FCC USE ONLY |
|-------|---------|-----------|------------------|
| M O R | 0 0 0 1 | \$ 545.00 | |

ADD ALL AMOUNTS SHOWN IN COLUMN C,
AND ENTER THE TOTAL HERE.
THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED
REMITTANCE.

| TOTAL AMOUNT REMITTED WITH THIS APPLICATION | FOR FCC USE ONLY |
|---|------------------|
| \$ 1020.00 | |

SECTION II - APPLICANT INFORMATION

1. NAME OF APPLICANT
Radio Tropical, Inc.

MAILING ADDRESS
5203 Armenia Avenue

CITY
Tampa

STATE
Fl

ZIP CODE
33603

2. This application is for:

- Commercial Noncommercial
 AM Directional AM Non-Directional

| | | | | |
|----------------------|--|---|--|---|
| Call letters WQBN | Community of License Temple Terrace | Construction Permit File No. BP-961016AD | Modification of Construction Permit File No(s). BP-981007DC | Expiration Date of Last Construction Permit April 30, 1999 |
|----------------------|--|---|--|---|

3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

Yes No

If No, explain in an Exhibit.

Directional Antenna Requires Program Test Authority

Exhibit No.
EE

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

Yes No

If No, state exceptions in an Exhibit.

Exhibit No.
N/A

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

Yes No

If Yes, explain in an Exhibit.

Exhibit No.
N/A

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

Yes No

If No, explain in an Exhibit.

Does not apply

Exhibit No.
N/A

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

Yes No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter

Exhibit No.
N/A

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

Yes No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

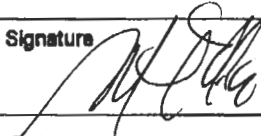
The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

Yes No

2. 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.

| | | |
|------------------------------|---|-----------------------------------|
| Name Radio Tropical, Inc. | Signature  | |
| Title Vice President | Date 04/27/1999 | Telephone Number (813)871-1333 |

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

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
Radio Tropical, Inc.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

Station License Direct Measurement of Power

| 1. Facilities authorized in construction permit | | | | | |
|---|--|--------------------|--------------------|--------------------|-----|
| Call Sign | File No. of Construction Permit (if applicable) | Frequency (kHz) | Hours of Operation | Power in kilowatts | |
| | | | | Night | Day |
| WQBN | BP-961016AB | 1300 | Unlimited | 1.0 | 5.0 |

| 2. Station location | |
|---------------------|--------------------------------|
| State Florida | City or Town Temple Terrace |

| 3. Transmitter location | | | |
|-------------------------|------------------------|-----------------------|--|
| State Fl | County Hillsborough | City or Town Tampa | Street address (or other identification) 5207 Washington Blvd. |

| 4. Main studio location | | | |
|-------------------------|------------------------|-----------------------|--|
| State Fl | County Hillsborough | City or Town Tampa | Street address (or other identification) 5203 Armenia Ave. |

| 5. Remote control point location (specify only if authorized directional antenna) | | | |
|---|------------------------|-----------------------|--|
| State Fl | County Hillsborough | City or Town Tampa | Street address (or other identification) 5203 Armenia Ave. |

6. Has type-approved stereo generating equipment been installed? Yes No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? Yes No

Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

| |
|-------------------|
| Exhibit No. EE |
|-------------------|

| 8. Operating constants: | |
|---|--|
| RF common point or antenna current (in amperes) without modulation for night system No Change | RF common point or antenna current (in amperes) without modulation for day system 10.19 |
| Measured antenna or common point resistance (in ohms) at operating frequency Night Day 542 | Measured antenna or common point reactance (in ohms) at operating frequency Night Day 0 |

| Antenna indications for directional operation | | | | | | |
|---|---|-------|---|-------|-----------------------|------|
| Towers | Antenna monitor Phase reading(s) in degrees | | Antenna monitor sample current ratio(s) | | Antenna base currents | |
| | Night | Day | Night | Day | Night | Day |
| 1 | | 0.0 | | 100.0 | | 7.80 |
| 2 | | -95.0 | | 60.0 | | 4.40 |
| 3 | | 125.0 | | 50.0 | | 3.70 |
| | | | | | | |
| | | | | | | |

Manufacturer and type of antenna monitor: Potomac Instruments AM19D(210)

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

| | | | | |
|---|---|---|---|---|
| Type Radiator Uniform cross-section guyed steel towers | Overall height in meters of radiator above base insulator, or above base, if grounded. #1,#3=55m #2=65.5m | Overall height in meters above ground (without obstruction lighting) #1,#3=56 #2=67 | Overall height in meters above ground (include obstruction lighting) #1-#3=56 #3=67 | If antenna is either top loaded or sectionalized, describe fully in an Exhibit. <div style="border: 1px solid black; padding: 2px; display: inline-block;">Exhibit No. N/A</div> |
|---|---|---|---|---|

Excitation Series Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

| | | | | | | | |
|----------------|------|------|------|----------------|------|------|------|
| North Latitude | 27 ° | 56 ' | 51 " | West Longitude | 82 ° | 23 ' | 45 " |
|----------------|------|------|------|----------------|------|------|------|

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
EE

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

Exhibit No.
EE

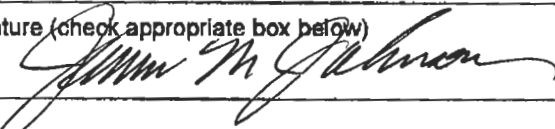
10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

The coordinates are different due to a correction found during tower registration.

11. Give reasons for the change in antenna or common point resistance.

N/A

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

| | |
|--|---|
| Name (Please Print or Type) James M. Johnson | Signature (check appropriate box below)  |
| Address (include ZIP Code) 10144 Seagrape Way Palm Beach Gardens, Fl 33418 | Date April 26, 1999 |
| | Telephone No. (Include Area Code) (561)625-5900 |

- | | |
|---|---|
| <input type="checkbox"/> Technical Director | <input type="checkbox"/> Registered Professional Engineer |
| <input type="checkbox"/> Chief Operator | <input checked="" type="checkbox"/> Technical Consultant |
| <input type="checkbox"/> Other (specify) | |

APPLICATION FOR LICENSE
AND PROOF OF PERFORMANCE
WQBN, TEMPLE TERRACE, FLORIDA

ENGINEERING STATEMENT

This Engineering Exhibit has been prepared on behalf of Radio Tropical, Inc., licensee of WQBN, Temple Terrace, Florida. WQBN currently holds a Construction Permit (BP-961016AB) to build new daytime facilities at the former daytime site of WTMP, Temple Terrace, Florida. WTMP has now completed its move which allows WQBN to begin operation from the site.

ANTENNA SYSTEM

The WQBN antenna system consists of three vertical, guyed, uniform cross-section, steel towers. Towers #1 and #3 are 55 meters or 85.7 electrical degrees in height, while tower #2 is 65.5 meters or 102.3 electrical degrees in height. The towers are spaced 99.5 electrical degrees on a 115 and 295 degree bearing.

SAMPLING SYSTEM

The WQBN phase and current sampling system consists of the following:

A. TCT-1 Sampling torroids are used at each of the towers. There is one in the output lead of each antenna coupling unit.

B. Three equal lengths of Cablewave FLC38-50J foam filled, hard outer shield type, coaxial cable are used to deliver the R.F. energy from the torroids to the Antenna Monitor. No connections are exposed to the weather. The cable is buried in the ground, except for the lengths from the antenna coupling units to the ground and inside the transmitter building. Since the cables are equal electrical length and the temperature variations in Florida are not extreme, the phase tolerance for the sample system will be within FCC tolerances.

C. A Potomac Instruments AM19-D (210) Antenna Monitor provides phase angle and sample current indications of the towers.

Engineering Statement

WQBN, Temple Terrace, Florida

Page 2

In view of the above, it is submitted that the WQBN antenna monitoring system meets the requirements of an approved sample system.

ADJUSTMENTS AND MEASUREMENTS

A non-directional as well as daytime directional proof of performance was conducted. The directional and the non-directional measurements were taken while switching between the modes via two-way radio. For non-directional operation, Tower #1 was used. The non-directional base impedance was measured with an R.F. Bridge and the measured resistance is 43.5 ohms. An antenna current of 5.36 amperes was maintained during non-directional operation for a power of 1250 watts. The unused towers were floating during non-directional operation. Directional measurements were made with the common point resistance adjusted to 52 ohms and the common point current maintained at 10.19 amperes daytime for 5,400 watts input.

Tower # 1 is used as the reference tower for the operating parameters. This tower has the highest operating current in the directional mode. Field strength measurements were made by James Johnson, Jeff Crews and Ed Pendino using Potomac Instruments FIM-41, S.N. 661 and FIM-21, S.N. 283 and FIM-41; S.N. 306 Field Strength Meters. The field strength meters were compared with FIM-41, S.N. 306 which was recently calibrated by the manufacturer. The meters were in agreement.

Measurement locations were found using topographic maps on land, supplemented by boat measurements in Tampa Bay. The exact location of the measuring points was determined by a differential GPS navigational system.

Exhibit 6 is a tabulation of field strength measurements for the directional and non-directional modes. The data is plotted on graphs of distance vs. field strength and the data analyzed. Exhibit 8 consists of graphs showing the plots of measured field strength and the conductivities

Engineering Statement
WQBN, Temple Terrace, Florida
Page 3

DIRECT MEASUREMENT OF POWER

The impedance at the common point and the non-directional antenna base was measured in the following manner:

A Potomac Instruments SD-31 Generator-Detector was used with a General Radio 916-A R.F. Bridge and a Potomac Instruments FIM-41 Field Strength Meter. The Bridge calibration was checked before measurements were made by placing known standards across the "output" terminals of the bridge. Measurements were made by James Johnson. The measurements were made at locations shown in Exhibit 16, the schematic of the phasing and coupling equipment. Manufacturer's instructions were followed in the operation of the equipment used for the measurements.

Manufacturer & Rated Accuracy

| <u>Instrument</u> | <u>Manufacturer</u> | <u>Rated Accuracy</u> |
|---|---------------------|---|
| • Radio Frequency Bridge Model 916-A | General Radio | Resistance (2%, +-1.0 ohm) Reactance (2%, +-1.0 ohm) |
| • SD-31 Gen-Detector | Potomac Instruments | .005% |
| • FIM-41 Field Strength Meter | Potomac Instruments | 2% |

MONITOR POINTS

Monitor points were established on the radials required by the construction permit. Photos as well as a description for proceeding to the monitor points is included as Exhibit 14. Exhibit 15 is a Map showing the locations of the Monitor Points. The distance to the 32 degree

Engineering Statement

WQBN, Temple Terrace, Florida

Page 4

monitor point exceeds 4 miles from the transmitter site. A waiver of that requirement is requested. The monitor points that were selected are easily accessible, on or near main roads.

GROUND SYSTEM

Specifications are the same as those shown on the construction permit. Exhibit 2 is a sketch of the system.

TOWER LIGHTING AND MARKING

Tower registration numbers are shown on Exhibit 1. Lighting and Marking is only required on tower #2.

R.F. RADIATION HAZARD

The general public will not be exposed to RF radiation as described by ANSI standards. Warning signs are posted at the locked gates to the towers. The station will reduce power or terminate operation when maintenance or repairs is required, or authorized personnel are in the area of RF hazard.

Additional Antennas

Two STL Antennas are side-mounted on tower #1. The RF energy crosses the base insulator using two Kintronics Isocouplers. These changes were completed before final adjustments and the proof of performances made.

Summary

There are no changes proposed in the nighttime operation with this application. A separate application is being prepared for a construction permit for nighttime changes. Based on the information included in the following exhibits, it is submitted that the daytime WQBN Antenna system is in proper adjustment and is ready for Program Test Authority.

EXHIBIT 1

VERTICAL TOWER SKETCH
WQBN, TEMPLE TERRACE, FLORIDA
1300 KHz., 5.0/1.0 Kw, DA-2
APRIL, 1999
WQBN DAY SITE

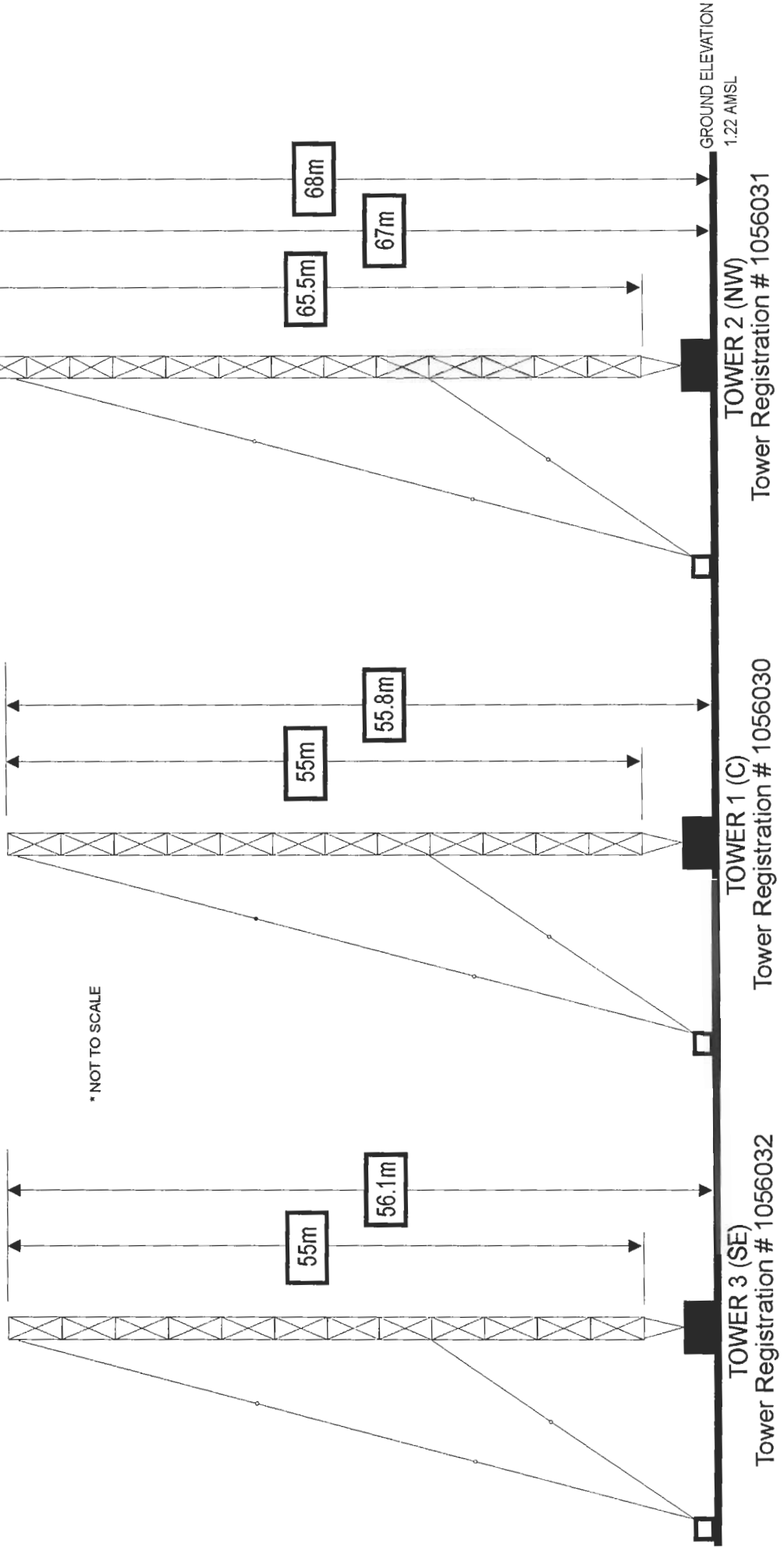
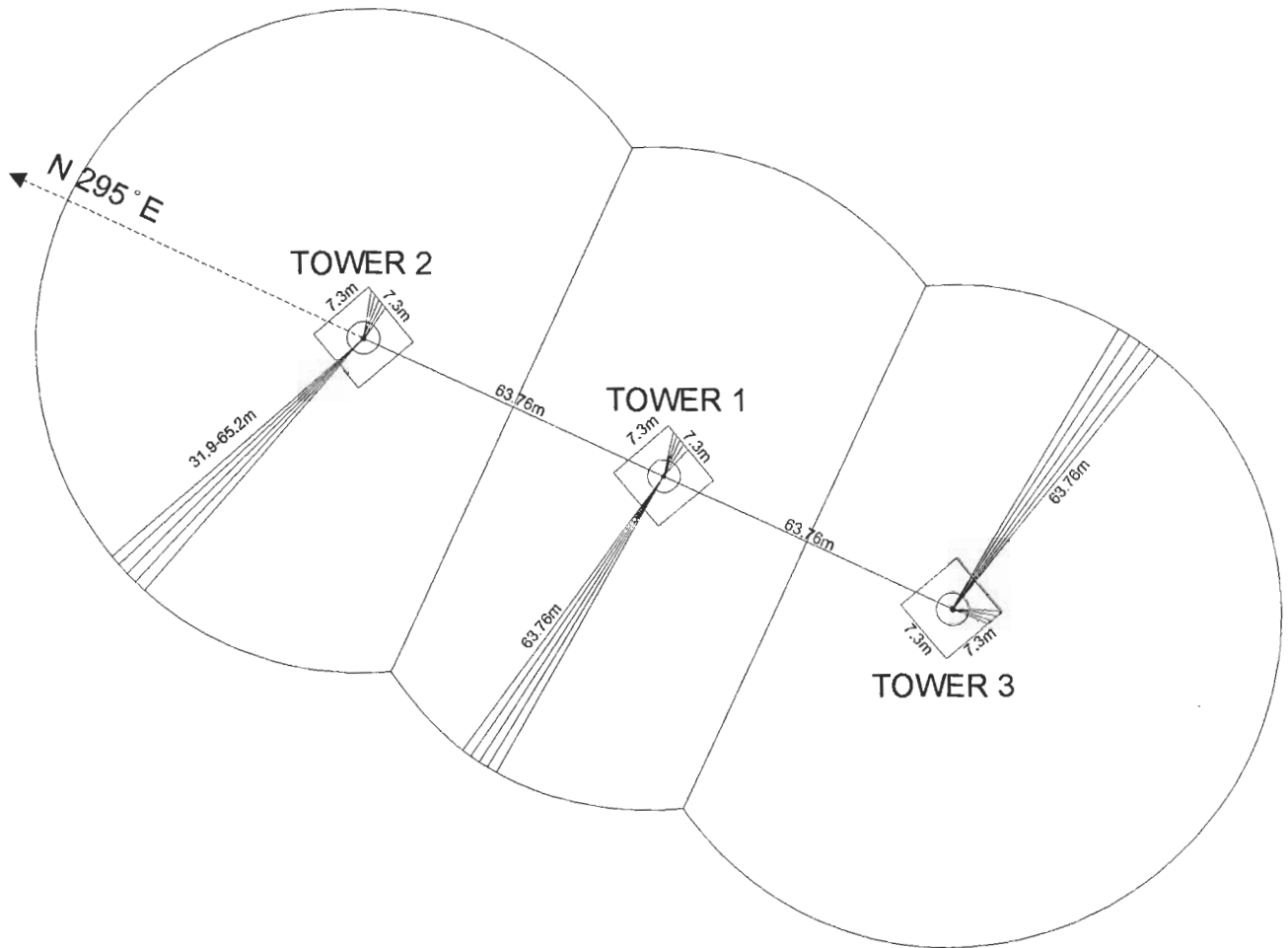
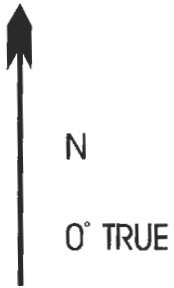


EXHIBIT 2

PLAT OF DAYTIME SITE
WQBN, TEMPLE TERRACE, FLORIDA
1300 KHz., 5.0/1.0 Kw, DA-2
APRIL, 1999



The existing ground system will be used and consists of 120-31.9 to 65.2 meter buried copper radials about the base of each tower. In addition, a 7.3 square meter copper ground screen is at the base of each tower. The radials are shortened and bonded to transverse copper straps between adjacent towers plus an additional strap bonding the centers of grounds.

EXHIBIT 3

ENGINEERING EXHIBIT
APPLICATION FOR LICENSE AND PROOF OF PERFORMANCE
WQBN, TEMPLE TERRACE, FLORIDA

ANTENNA OPERATING SPECIFICATIONS

DAYTIME

| Tower: | <u>#1(C)</u> | <u>#2(NW)</u> | <u>#3(SE)</u> |
|----------------------------------|--------------|---------------|---------------|
| Theoretical Field Ratio: | 1.000 | 0.822 | 0.527 |
| Theoretical Phase: (Degrees) | 0.00 | -102.6 | 157.6 |
| Operating Base Currents (Amps): | 7.80 | 4.40 | 3.70 |
| Operating Base Current Ratio: | 1.000 | 0.564 | 0.474 |
| Antenna Monitor Loop Currents: | 100.0 | 60.0 | 50.0 |
| Antenna Monitor Phase: (Degrees) | 0.00 | -95.0 | 125.0 |

POWER DETERMINATION:

| | | |
|----------------------------|-------|---------|
| Measured Resistance = | 52 | Ohms |
| Common Point = | 10.19 | Amperes |
| Power (10.0)x(10.0)x(54) = | 5399 | Watts |

EXHIBIT 4

ENGINEERING EXHIBIT
APPLICATION FOR LICENSE AND PROOF OF PERFORMANCE
WQBN, TEMPLE TERRACE, FLORIDA
1300 KHz. 5.0/1.0 Kw DA-2

TABULATION OF UNATTENUATED FIELD INTENSITIES

| RadialTrue Bearing (Degrees) | DA/NON-DA (Ratio) | Inverse Field at one Kilometer (DAYTIME) | | | Monitor Point Distance (Km) | Monitor Point Values (mV/m) |
|------------------------------------|----------------------|---|---|--|-----------------------------------|-----------------------------------|
| | | Measured NON- DA 1250 watts (mV/m) | C. P. Max Standard Pattern (mV/m) | 1999 Measured 5400 watts DA-D (mV/m) | | |
| *32 | 0.917 | 320 | 415.7 | 293.4 | 7.13 | 23.0 |
| 45 | 0.720 | 320 | 423.98 | 230.4 | | |
| *115 | 0.227 | 390 | 149.6 | 88.5 | 4.83 | 9.0 |
| 185 | 1.061 | 310 | 423.98 | 328.9 | | |
| *198 | 1.329 | 310 | 415.7 | 412 | 2.81 | 125.0 |
| 245 | 2.841 | 340 | 1001.27 | 966 | | |
| 295 | 3.161 | 390 | 1330.39 | 1221 | | |
| 345 | 2.803 | 340 | 1001.26 | 953 | | |

* CP Radials

EXHIBIT 5

MAP INDEX

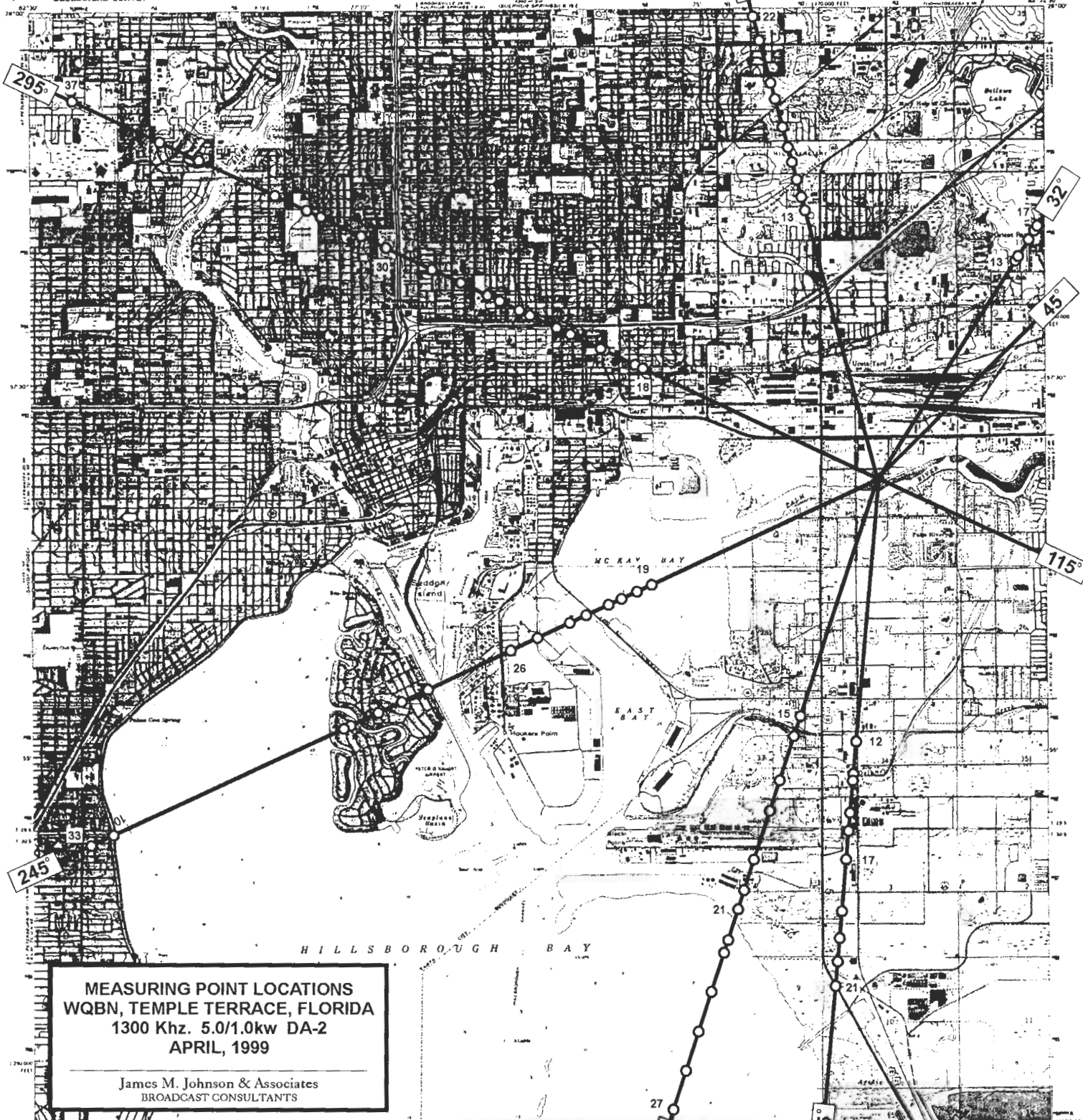
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz, 5.0/1.0 Kw, DA-2

| | | | | |
|------------------------------|----------------------------|-------------------------------|-----------------------------|-------------------------------|
| | | LUTZ EXHIBIT 5Q | WESLEY CHAPEL EXHIBIT 5D | ZEPHYRHILLS EXHIBIT 5E |
| OLDSMAR EXHIBIT 5O | CITRUS PARK EXHIBIT 5N | SULPHUR SPRINGS EXHIBIT 5P | THONOTOSASSA EXHIBIT 5C | PLANT CITY WEST EXHIBIT 5F |
| | GANDY BRIDGE EXHIBIT 5K | TAMPA EXHIBIT 5A | BRANDON EXHIBIT 5B | DOVER EXHIBIT 5G |
| ST. PETERSBURG EXHIBIT 5M | PORT TAMPA EXHIBIT 5L | GIBSONTOWN EXHIBIT 5I | | LITHIA EXHIBIT 5H |
| | | RUSKIN EXHIBIT 5J | | |

EXHIBIT 5A

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

TAMPA QUADRANGLE
FLORIDA—HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS

Mapped, edited, and published by the Geological Survey
Compiled by USGS, NOAA and USCI
Contours and drainage - self compiled from aerial photographs
June 1954. Topography by planimetric surveys 1956
Selected topographic data compiled from N75 chart 587 (1952)
This information is not intended for navigational purposes
Photographic control - 10 000 foot grid data based on Florida
Coordinate system, with 1980 1000 meter Universal Transverse
Mercator grid (zone 17, datum as of 1927 North
American Datum. To date on the projected North American
Datum 1983 near the ground line 144 29 north and
17 16 west and as shown by dashed lines 14 19
Red dot indicates areas in which topographic soundings are shown
Resoundings shown in purple complete form, or in yellow with
lines 1978 and other hand on. This information
field checked. Year shown 1981

CONTOUR INTERVAL: 5 FEET
NATIONAL GEODESIC SURVEY DATUM OF 1983
DEPTH CURVES AND SOUNDINGS IN FEET - MEAN LOW WATER DATUM
SCALE: 1"=1740'
THIS MAP COMPLETES WITH NATIONAL MAP SECURITY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225 (OR RESTON, VIRGINIA 22092)
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

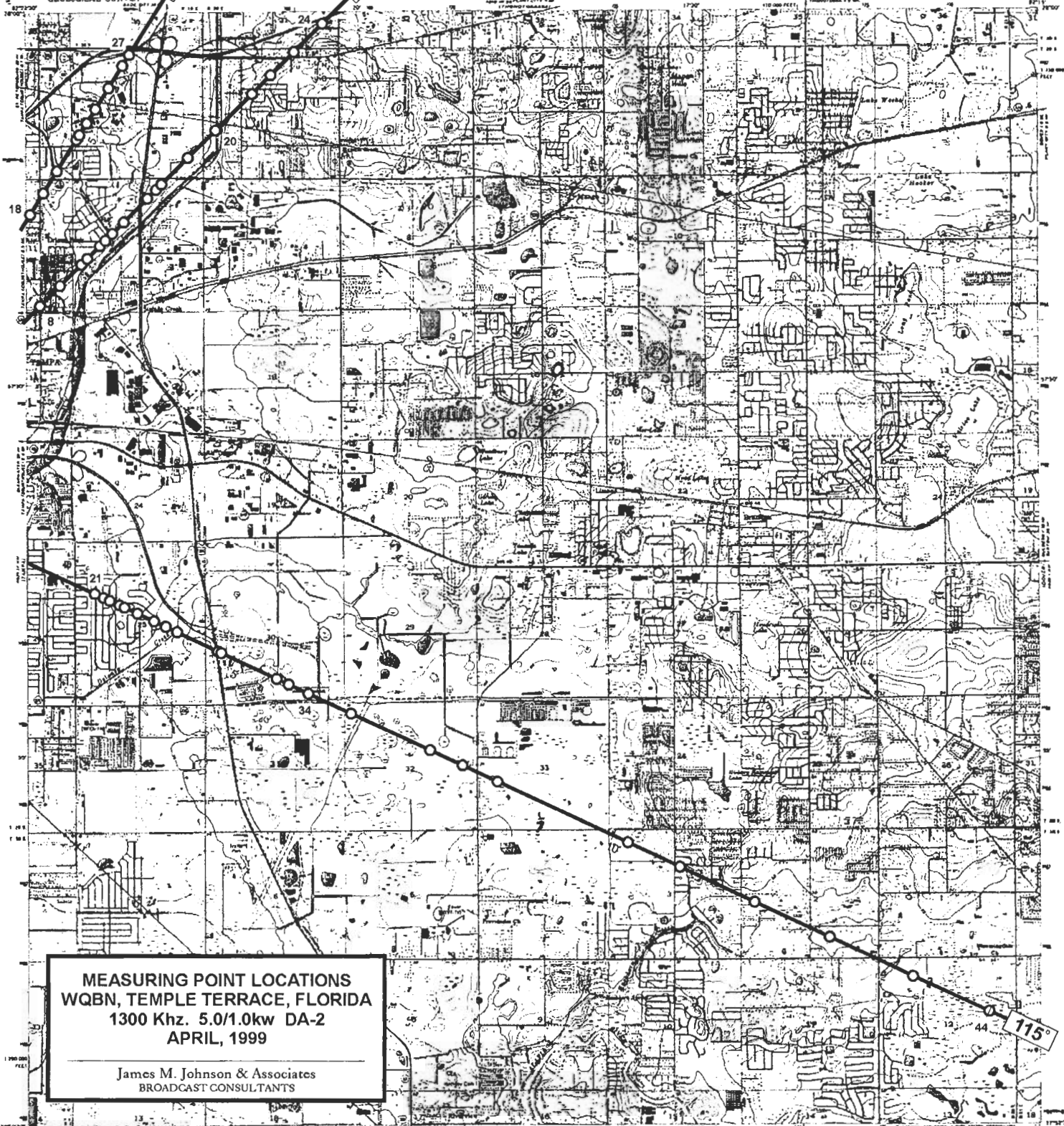
ROAD CLASSIFICATION
Heavy-duty Light-duty
Medium-duty Unimproved dirt
Interstate route U.S. Route State Route

TAMPA, FLA.
1709-441-018
1984
PHOTO REVISED 1981
2nd-458 (1-79 REVISED 1981)

EXHIBIT 5B

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BRANDON QUADRANGLE
FLORIDA-HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS

Mapped, edited, and published by the Geological Survey
Control by USGS, NOS/DOD, and Florida Coastal Survey
Contours and drainage in part compiled from aerial photographs
taken 1955. Topography by stadia/altimeter surveys 1955-1956
Polyconic projection. 10,000-foot grid ticks based on Florida
American system, zone 18N. 100-foot contour interval. Vertical
meridian grid ticks, zone 17, which is false. 1977 North
American Datum. In place on the geoid. North American
Datum 1983 uses the projection. Zone 17 datum shift and
17 meters west as shown by dashed corner ticks.
Per page last indicated subsection of urban areas.



SCALE 1:24,000
CONTOUR INTERVAL 5 FEET
NATIONAL GRIDLINE, VECTOR, DATE OF 1983



ROAD CLASSIFICATION

Thick solid line — Light duty
Thin solid line — Unimproved dirt
Dashed line — U.S. Road
Circle with dot — Sub Road
Circle with cross — Unimproved Road

THIS MAP COMPLEYS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER COLORADO 80215 OR RESTON VIRGINIA 20192
A FOLDER BOUND TOPOGRAPHIC MAPS AND STORES IS AVAILABLE ON REQUEST

Boundaries shown in this map are based on information
as of the date of the original aerial photographs from 1955
+13 other sources. This information was field checked
Map date: 1981

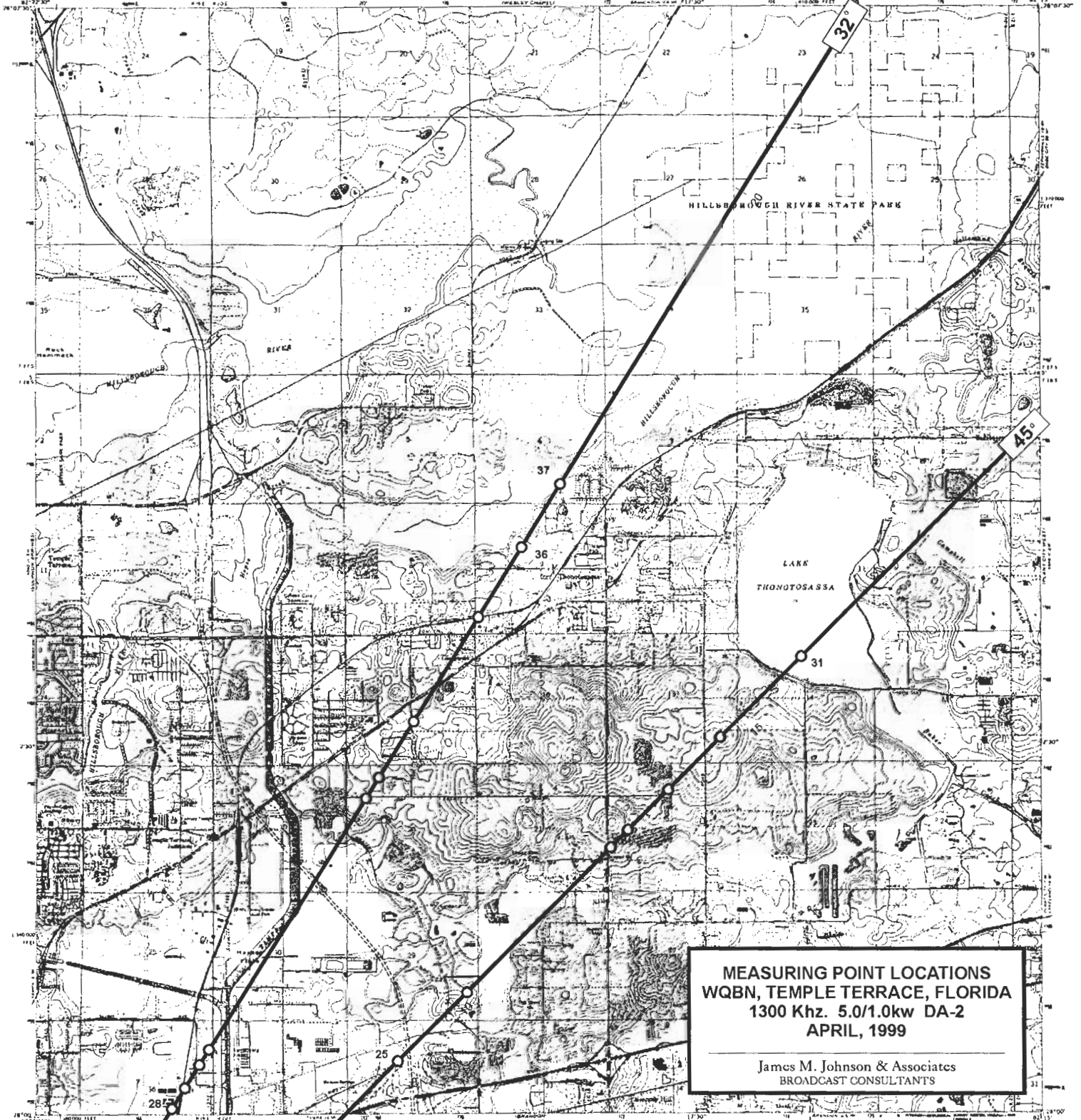
BRANDON, FLA.
77082-43-17 024
PHOTOGRAPHICALLY DERIVED
DATA FROM THE 7.5-MINUTE SERIES 1987

EXHIBIT 5C

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

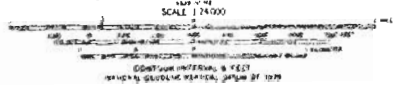
THONOTOBASSA QUADRANGLE
FLORIDA - HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
 BROADCAST CONSULTANTS

Map made, edited and published by the Geological Survey
 Contours by U.S.G.S. 1974. Index and Florida Department of Transportation
 Topography by aerial photogrammetry from air photo coverage
 from December 1971, and from 1974
 Supplemental from the State Plane Map dated 1963
 Population and 10,000 feet and less: Florida Department
 of State, 1974. (Source: U.S. Census Bureau)
 1:250,000 Scale on Florida State Plane Map, 1963, and U.S.G.S.
 1:250,000 Scale on Blue 1967 North American Datum
 1983 on the Florida State Plane Map, 1963, and U.S.G.S.
 1:250,000 Scale on Florida State Plane Map, 1963, and U.S.G.S.
 1:250,000 Scale on Florida State Plane Map, 1963, and U.S.G.S.
 1:250,000 Scale on Florida State Plane Map, 1963, and U.S.G.S.



ROAD CLASSIFICATION

| | |
|----------------------------------|--|
| Primary highway and surface | Light duty road, paved or improved surface |
| Secondary highway, paved surface | Unimproved road |
| Arterial Road | U.S. Route |
| | State Road |

THIS MAP COMPLETES THE NATIONAL MAP RELIEF PROGRAM
 FOR SALE BY U.S. GEOLOGICAL SURVEY
 DENVER, COLORADO 80263 OR HILLSBOROUGH, FLORIDA 33602
 A HOLDER DESCRIBING TOPOGRAPHIC MAPS AND OTHERS IS AVAILABLE ON REQUEST

Map users should be aware that information is presented
 with State of Florida's map of the State of Florida.
 Users should be aware that information is presented
 with State of Florida's map of the State of Florida.

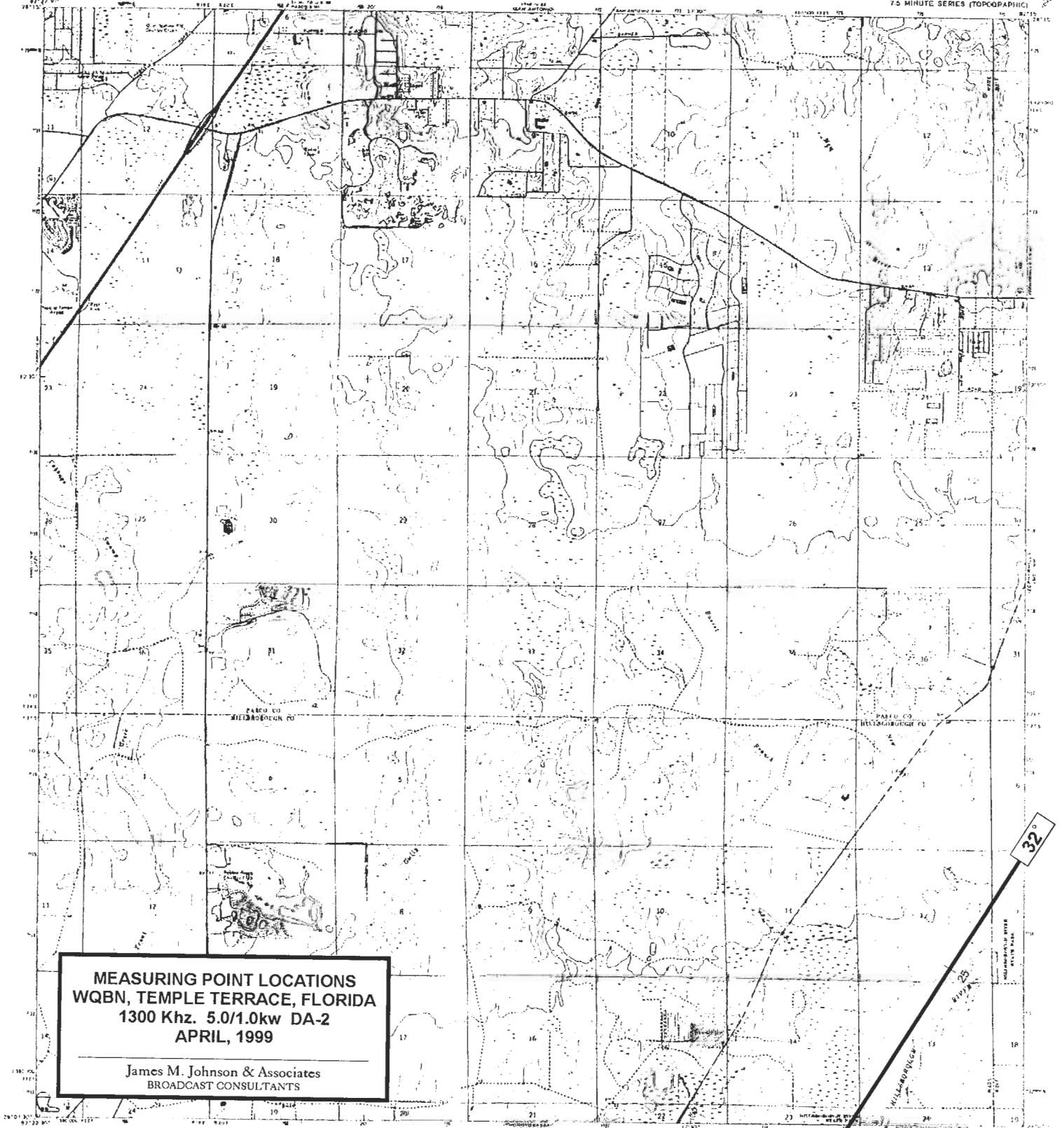
THONOTOBASSA, FLA.
 20082 AS-11-074
 1974
 PHOTOGRAPHIC VIDEO 1987
 DMS 1987 IN M. 1987

EXHIBIT 5D

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

WESLEY CHAPEL QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)



**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS

Map compiled and published by the Geological Survey
Controlled by USGS and other agencies
This map is a reproduction of the original map
...
CONTOUR INTERVAL: 5 FEET
NATIONAL GRID: NORTH AMERICAN DATUM 1983
WESLEY CHAPEL, FLA
7.5 MINUTE SERIES
1979
PHOTOREPRODUCED FROM THE ORIGINAL MAP

EXHIBIT 5E

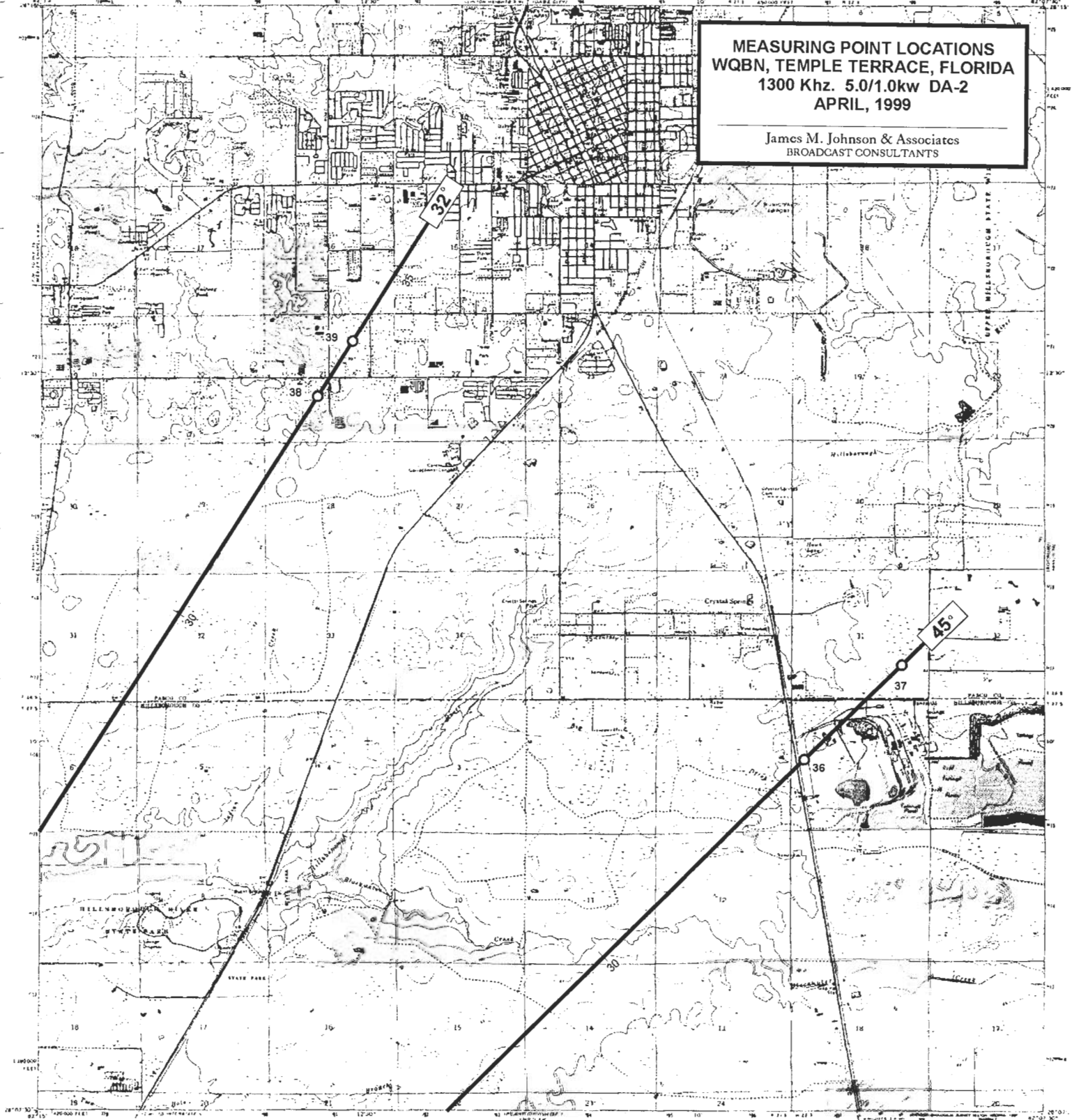
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

ZEPHYRHILLS QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)

**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS



Map made, edited, and published by the Geological Survey
Contract to USGS and NGS-MDAA
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The map is published under the authority of the Director, Geological Survey, Department of the Interior, Washington, D.C. 20508.
The map is published under the authority of the Director, Geological Survey, Department of the Interior, Washington, D.C. 20508.

USGS
The map is published under the authority of the Director, Geological Survey, Department of the Interior, Washington, D.C. 20508.

SCALE 1:24,000
GEOLOGICAL SURVEY
The map is published under the authority of the Director, Geological Survey, Department of the Interior, Washington, D.C. 20508.

ROAD CLASSIFICATION
Primary Highway
Light Duty Road
Secondary Highway
Improved Surface
Unimproved Road
Interstate Route
State Route
County Road

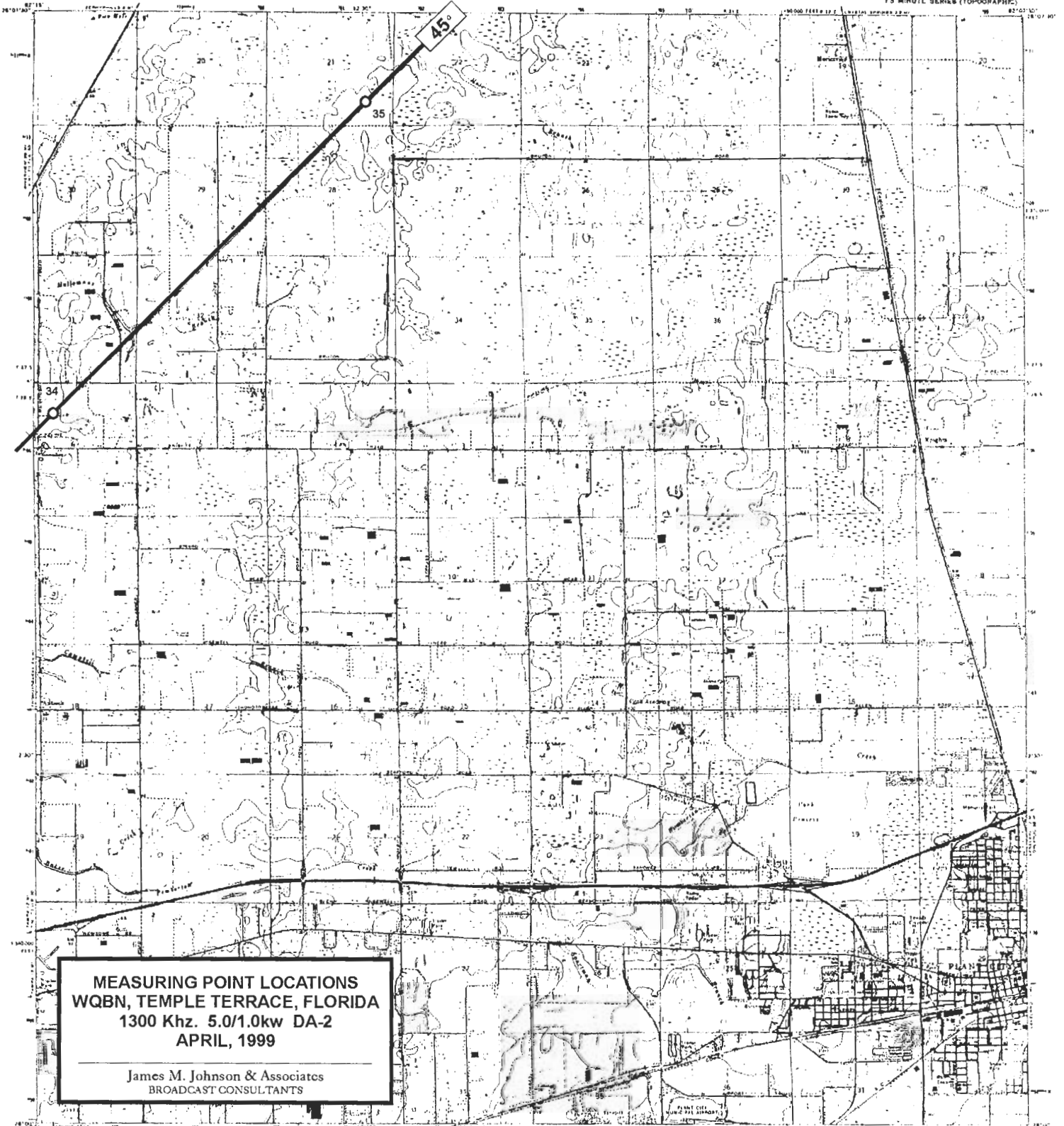
ZEPHYRHILLS, FLA
1976
PHOTOGRAPHED 1967
MAY 1968 & 1973

EXHIBIT 5F

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

PLANT CITY WEST QUADRANGLE
FLORIDA--HILLSBOROUGH CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



Produced by the United States Geological Survey,
Florida by USGS, WQBN and Florida Department of
Transportation by using the same methods as in previous
years (1977) and (1978).
Projection and 10,000 feet grid lines for reference
only. All measurements are in feet above mean sea level
1,000 meters to vertical datum and horizontal datum of
1929 from National Datum (NAD 29).
North American Datum of 1983 (NAD 83) is shown in brackets in the text.
The values of the vertical datum (NAD 29) and horizontal datum (NAD 83) are
interchangeable and given in USGS Bulletin 173.
Revisions made in 1977 and 1978. All measurements are in feet above mean sea level.
The values of the vertical datum (NAD 29) and horizontal datum (NAD 83) are
interchangeable and given in USGS Bulletin 173.
Revisions made in 1977 and 1978. All measurements are in feet above mean sea level.
The values of the vertical datum (NAD 29) and horizontal datum (NAD 83) are
interchangeable and given in USGS Bulletin 173.



SCALE 1:24,000
COMPILED FROM USGS TOPOGRAPHIC MAPS
NATIONAL GEODETIC SURVEY
NATIONAL GEODETIC SURVEY
NATIONAL GEODETIC SURVEY
NATIONAL GEODETIC SURVEY

| | | | | |
|----|----|----|----|----|
| 1 | 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 | 9 |
| 10 | 10 | 10 | 10 | 10 |

ROAD CLASSIFICATION
Primary road
Secondary road
Tertiary road
Unimproved road
Road surface
Interstate route
State route

PLANT CITY WEST, FLA
262827 71204
1975
MINOR REVISIONS

THE INFORMATION ON THIS MAP IS FOR INFORMATION PURPOSES ONLY.
NO WARRANTY IS MADE BY THE GEOLOGICAL SURVEY.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST.

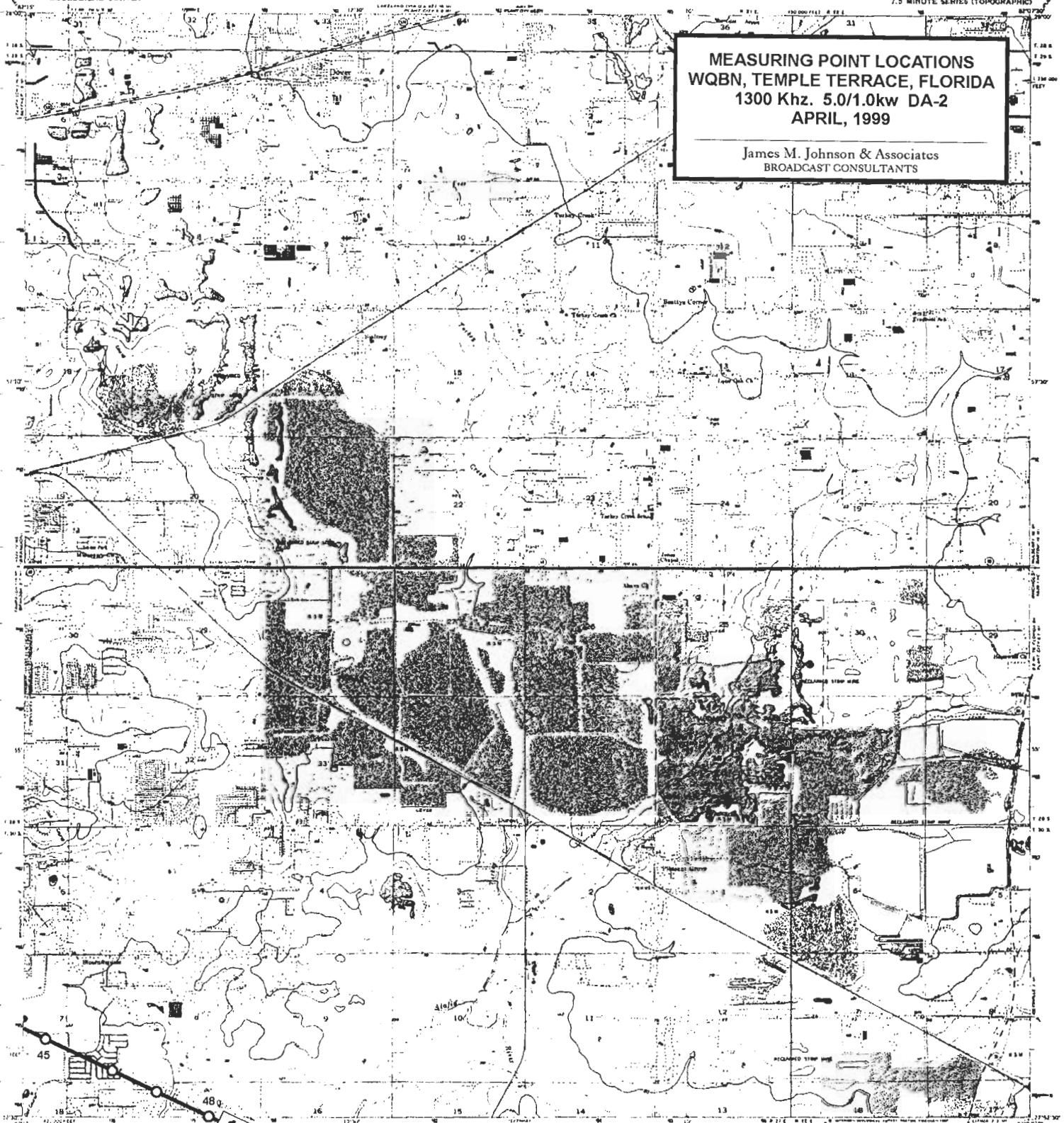
EXHIBIT 5G

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

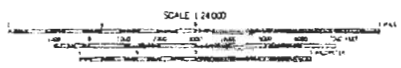
DOVER QUADRANGLE
FLORIDA-HILLSBOROUGH CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS



Mapped, edited, and published by the Geological Survey
Control by USGS and USACE
Contours and drainage in part inherited from aerial photographic
data 1947. Topography by photostereoscopic surveys 1955
Projected projection: 1983 North American datum
1:50,000 scale projection based on Florida coordinate system
zone 18N
1:50,000 scale projection: Transverse Mercator, zone 18N
zone 18N, datum: 1983
To scale on the projected North American Datum 1983
round the projection lines 29 meters south and
17 meters east as shown by dashed corner ticks
Light points and markings not shown may vary
Dashed contours in blue indicate areas not covered



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

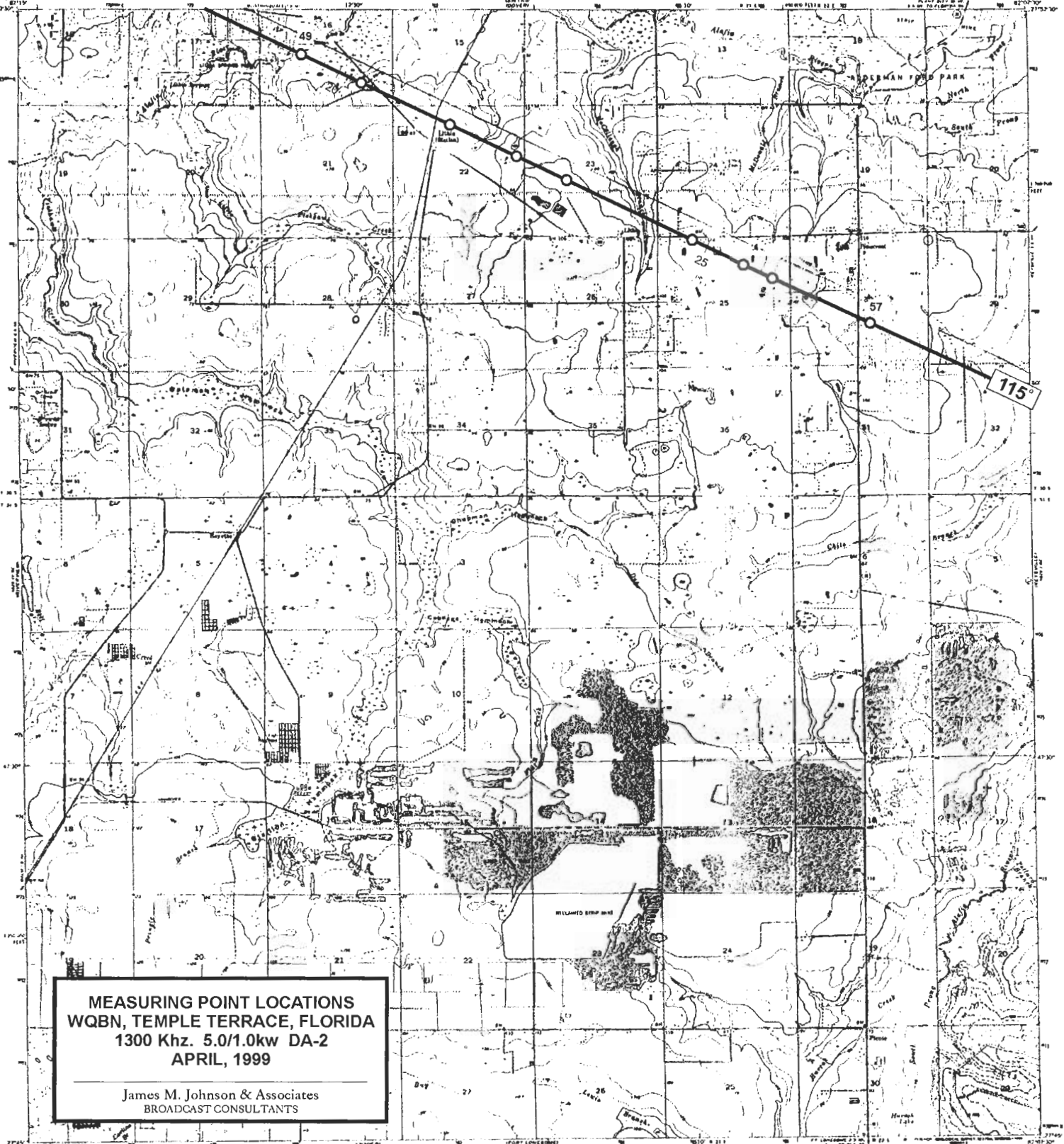
THIS MAP COMPLEYS WITH NATIONAL MAP RESILIENCY STANDARDS
FOR SCALE BY U.S. GEOLOGICAL SURVEY
DENVER COLORADO 80703 OF WASHINGTON WASHINGTON 20002
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy duty Light duty
Medium duty Unimproved dirt
U.S. Route State Road

W. A. READ, JR. & ASSOCIATES
610 South ... DOVER, FLA.
27082-4217-024
1998
PHOTOGRAPHED 1987
D.M. 4361 M.P. SERIES 1987

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

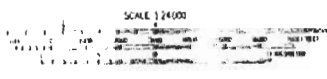
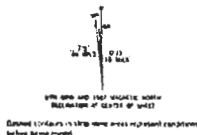
LITHIA QUADRANGLE
FLORIDA - HILLSBOROUGH CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS

Mapped, edited, and published by the Geological Survey
Control by USGS, USCGS, and Florida Geologic Survey
Culture and drainage in part compiled from aerial photography
taken 1947. Topography by photostereoscopy 1955.
Photographic projection. 1927 North American Datum.
10,000 foot grid ticks based on Florida coordinate system, east and
1000-meter universal Transverse Mercator grid ticks.
Scale 1:24,000.
To place on the projected North American Datum 1983
read the projection base 50 meters south and
17 meters west as shown by dashed corner ticks.
Revisions shown in purple and boldface (compiled in 1999) and
with State of Florida approval from aerial photography
taken 1983 and other sources. This information will find checked
Map scales 1:62,500
Purple red and blue shaded strip show areas



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

| | |
|-------------|-----------------|
| Heavy duty | Light duty |
| Medium duty | Unimproved dirt |
| U.S. Route | State Road |

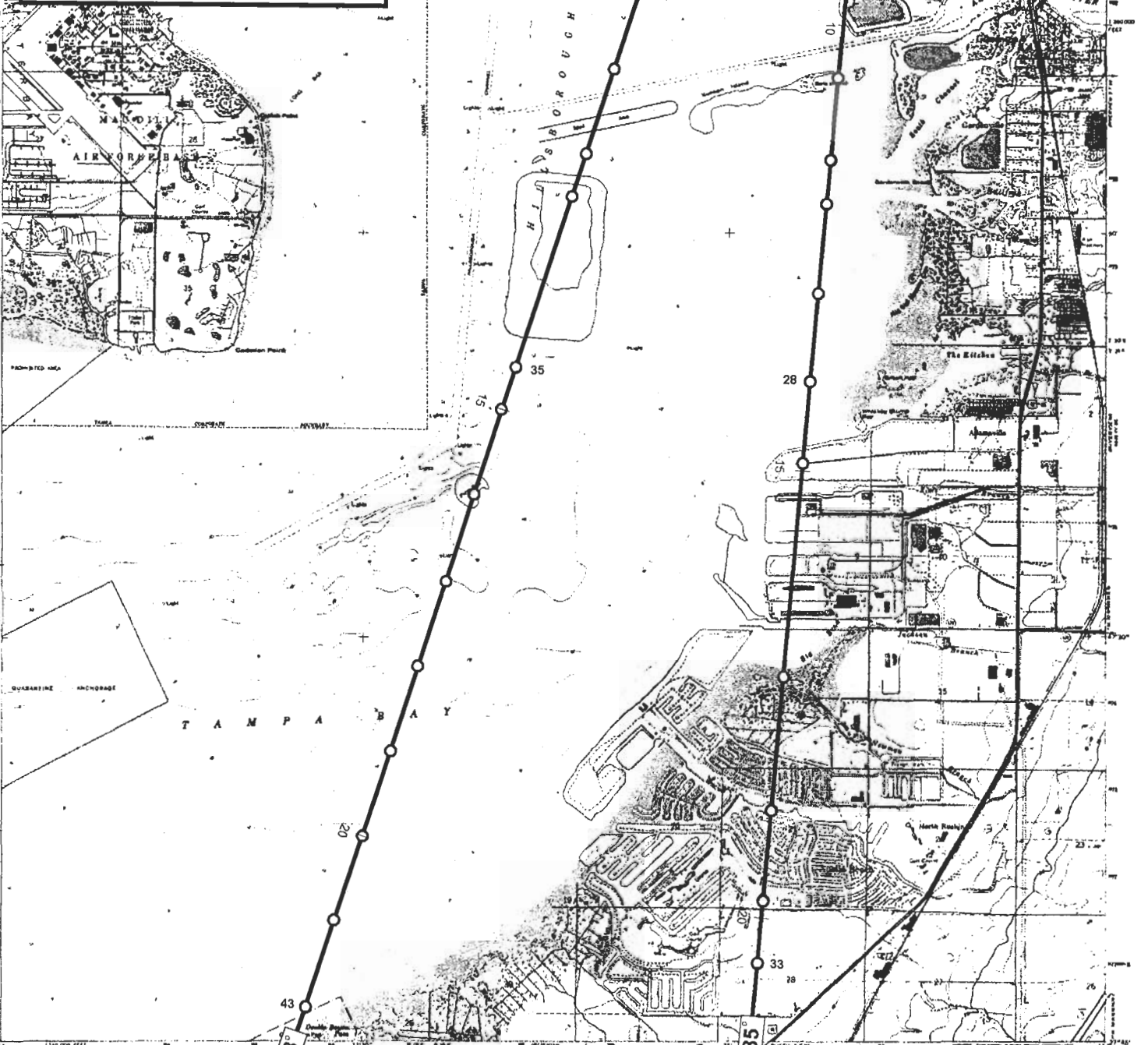


LITHIA, FLA.
1966
PHOTOGRAPHIC SURVEY
Data from U.S. GEOLOGICAL SURVEY

THIS MAP COMPILED WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80260 OR IN WASHINGTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

**MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999**

James M. Johnson & Associates
BROADCAST CONSULTANTS



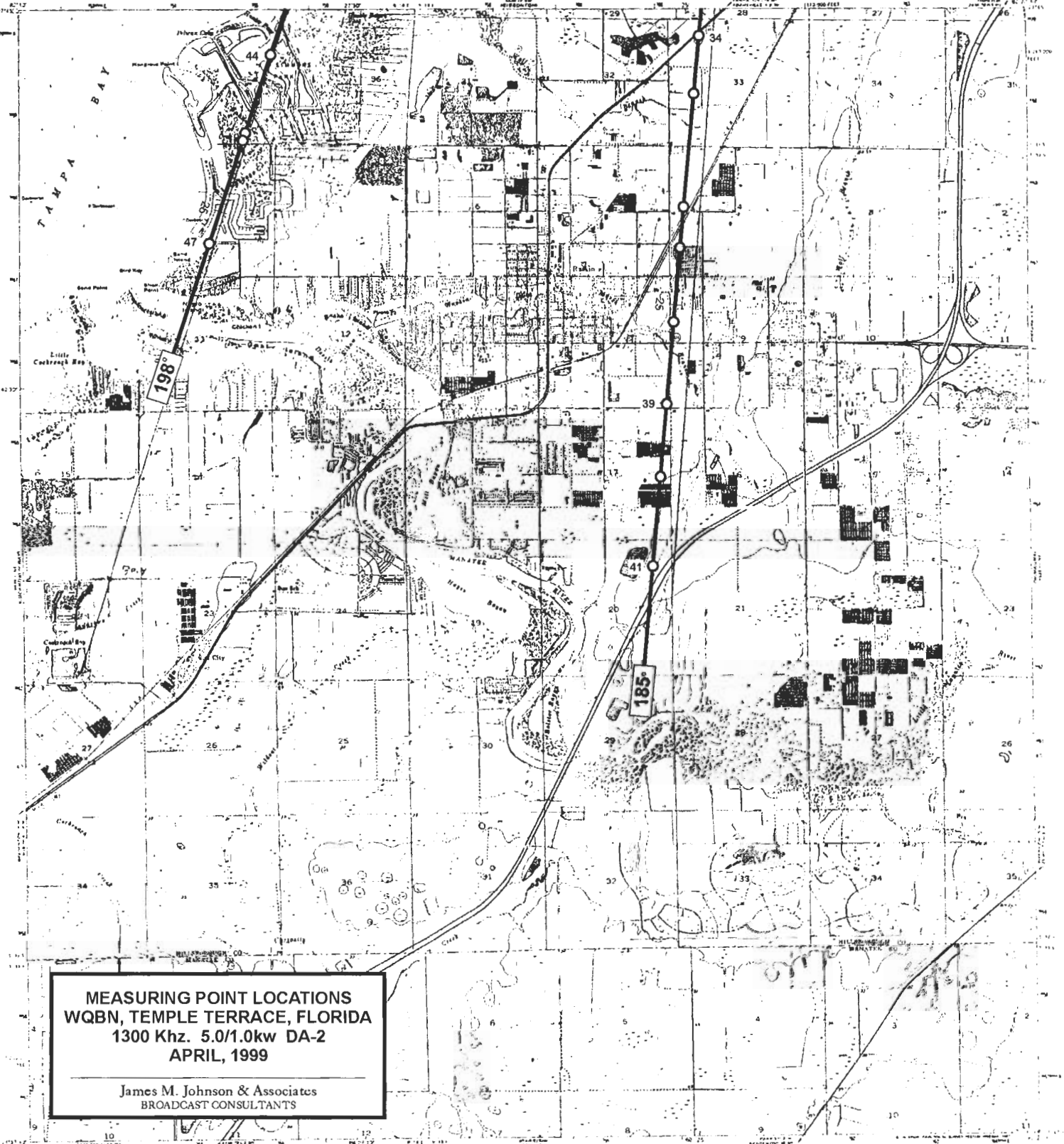
Mapped, edited, and published by the Geological Survey
Controlled by USGS and ROS/NSA
Produced by geospatial data services from aerial photography
since 1954. Topography by photostereoscopy 1954
Selected hydrographic data derived from USGS chart 562 (1952)
This information is not intended for navigation purposes
Projection: 10,000-foot grid based on Florida coordinate
system, used since 1900 under Universal Transverse Mercator
zone 17, shown in text. 1927 North American Datum. To place on the
projected North American Datum 1983, move the easting value
50 meters south and 17 meters west as shown by dotted corner ticks.
Red dashed outlined area in which any landmarks (buildings) are shown
This map or aerial photographs upon the ownership of
the Bureau of State Reclamation shown on this map

SCALE 1:25,000
CONTOUR INTERVAL 5 FEET
NATIONAL MEGALITHIC HORIZONTAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET-DATUM: 1929 LOWEST LOW WATER
THE DATUM FOR 1929 IS 5.5 FEET ABOVE SEA LEVEL
MUSKOGEE TRAIL BRIDGE, THE BRIDGE IS 1.5 FEET
THE ROAD BRIDGE IS 1.5 FEET ABOVE SEA LEVEL
THIS MAP COMPLETES THE NATIONAL MAP ACCURACY PROGRAM
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80215 OR RESTON, VIRGINIA 22089
A FOLDER CONTAINING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Primary highway, all weather. Light duty road, all weather.
Hard surface. Improved surface.
Secondary highway, all weather. Unimproved road, fair or dry
hard surface. Unimproved road, poor or dry
weather.
Tourist Route. U.S. Route. State Route.

REVISIONS shown in purple and indicated complete in green
-on top of Florida agencies from aerial photographs before 1994
and other sources. The information was last checked
May 1995/1997

GIBBSONTON, FLA.
27082 GA-17-024
1:25,000
PHOTOGRAPHIC 1997
Scale 1:25,000

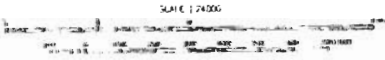


MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS

Mapped, edited, and published by the Geological Survey
Formerly USGS BEDFORD and Forest Geologic Survey
Contours and drainage compiled from aerial photographs
taken 1958. Topography by 1:250,000 scale 1958
Selected hydrographic data extracted from USGS Chart 11838
(The information is not intended for navigational purposes)
Primary projection - 10,000-foot grid/zone based on North
polar datum - used since 1900 (except on United States
Maples and Tides, zone 17 shown in blue 1987 North
American Datum) To place on the datum: 10000 feet x
Datum 1983 from the projection: zone 12 - reverse height and
17 meters must be shown by dashed lines 1:250,000
Elevations shown in purple and black (not used) - not in
conjunction with 1000-foot contours - in purple
contour map (1983 and other sources) To
transfer to a new datum - use 1983 datum - 17

Vertical datum used: NAVD 83
Mean sea level at lowest of water



CONTOUR INTERVAL: 5 FEET
NATIONAL GRID: ZONE 17E
EARTH QUAKES AND DISLOCATIONS: SEE LIST OF MEASUREMENTS AND WATER
LEVELS IN THE MAP SHEET
FOR SALE BY U.S. GEOLOGICAL SURVEY
DISTRIBUTION STATEMENT: ORIGINAL SOURCE OF INFORMATION: 2202
A FULLY DESCRIBED TOPOGRAPHIC MAP AND EVIDENCE IS AVAILABLE IN THE RECORDS

FIELD CLASSIFICATION

| | |
|--------|-------|
| Shaded | Light |
| Black | Dark |
| Blue | Blue |
| Red | Red |
| Green | Green |
| Brown | Brown |

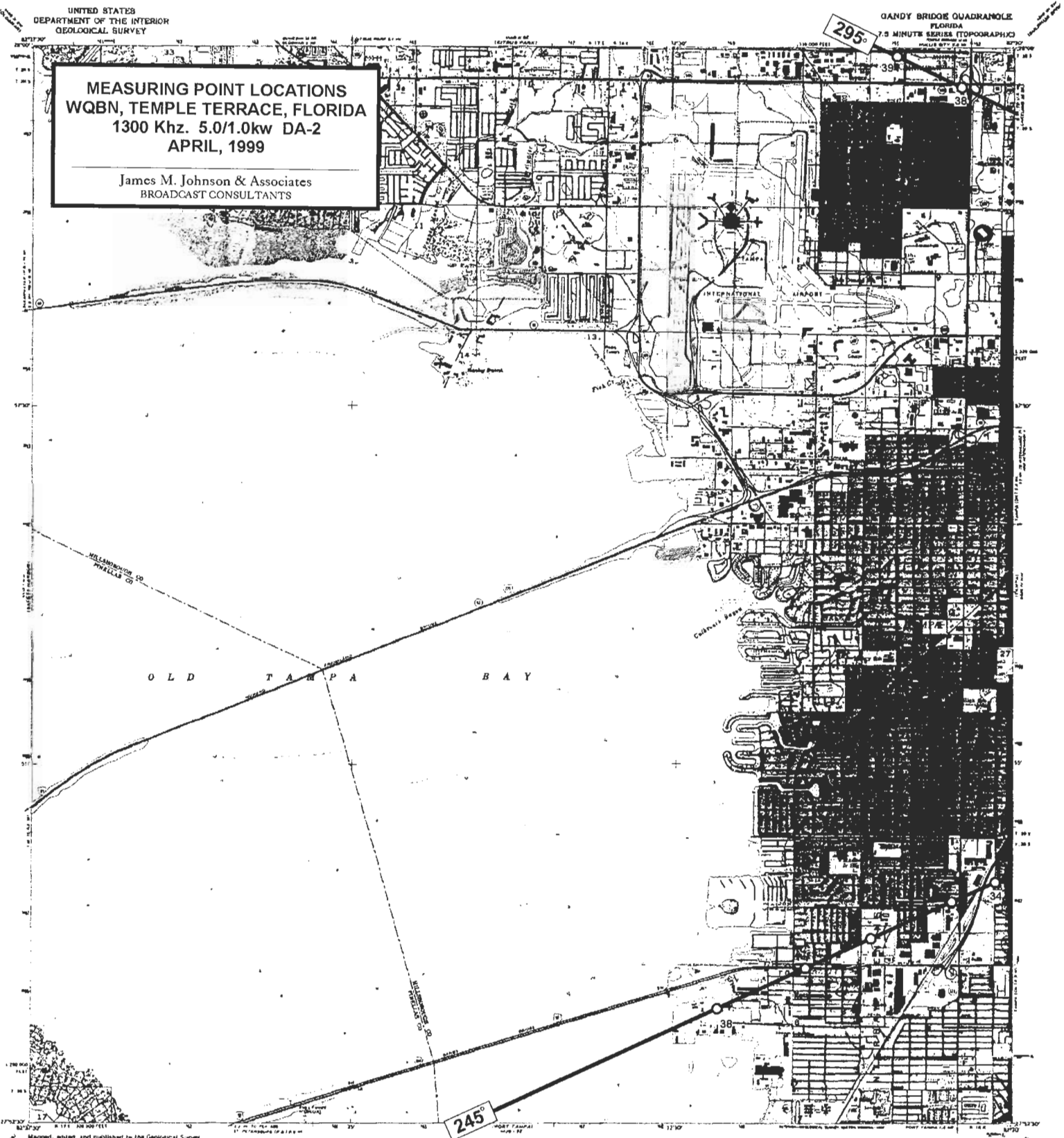
RUSKIN, FLA
21282711 071
1998
PUBLISHED BY U.S. GEOLOGICAL SURVEY
DISTRIBUTION STATEMENT: ORIGINAL SOURCE OF INFORMATION: 2202

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GANDY BRIDGE QUADRANGLE
FLORIDA
15 MINUTE SERIES (TOPOGRAPHIC)

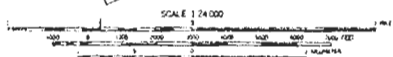
MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS



Mapped, edited, and published by the Geological Survey
Control by USGS and NGS/NOAA
Contours and drainage in part compiled from aerial photographs
taken 1955. Topography by quadrangle surveys 1956
Mapnet 1992, mapped 1996
Selected hydrographic data compiled from NGS chart 587 (1992)
This information is not intended for navigational purposes
Vertical datum: 10 000 feet geoid based on Florida
coordinate system, spot 1000-foot (United States)
Horizontal datum: To read on the grid use North
Datum 1983. The grid has lines 29 meters apart and
17 meters from the center of the grid.
Red line indicates water in which every contour is shown
Purple = National Hydrographic Office chart

Contours in part and drainage compiled from photographs
taken 1955. Topography by quadrangle surveys 1956
Mapnet 1992, mapped 1996
Selected hydrographic data compiled from NGS chart 587 (1992)
This information is not intended for navigational purposes
Vertical datum: 10 000 feet geoid based on Florida
coordinate system, spot 1000-foot (United States)
Horizontal datum: To read on the grid use North
Datum 1983. The grid has lines 29 meters apart and
17 meters from the center of the grid.
Red line indicates water in which every contour is shown
Purple = National Hydrographic Office chart



CONTOUR INTERVAL: 5 FEET
VERTICAL DATUM: MEAN SEA LEVEL
DEPTH CURVES AND SOUNDINGS IN FEET: SOUNDING LINE WATER
LEVEL: MEAN SEA LEVEL
HORIZONTAL DATUM: NAD 83
THIS MAP SHOWS THE NATIONAL GRID COORDINATE SYSTEM
FOR DATA BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225 OR RESTON, VIRGINIA 20192
A PORTION OF GEORGE WASHINGTON WALKER'S 1858 MAP IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

- Heavy-duty
- Light-duty
- Main-trunk
- Unimproved dirt
- U.S. Route
- State Route
- Private Road

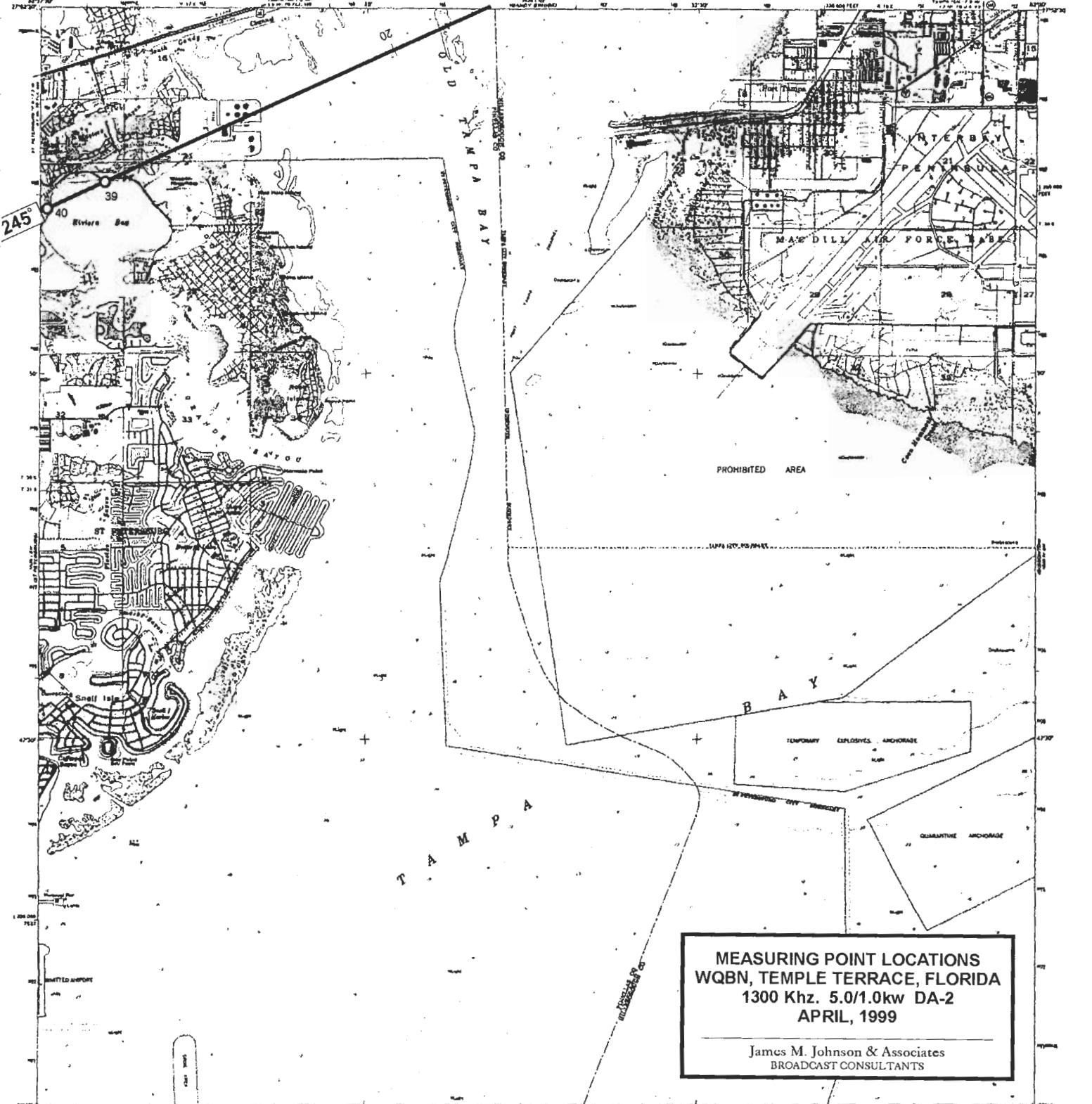
QUADRANGLE LOCATION

GANDY BRIDGE, FLA.
27082-10-11-024

1996
PHOTOGRAPHED 1987
DATE 8191 N. 11. 1987

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PORT TAMPA QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)

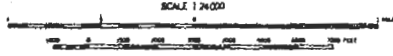


MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS

Mapped, edited, and published by the Geological Survey
Conduct by USGS, MOBILE, and Florida Geologic Survey
Culture and drainage in part derived from aerial photographs
taken 1954. Transferred to photostatic survey, 1958.
Selected photographic data compiled from USGS chart 587 (1952).
This information is not intended for navigational purposes.
Photocopy instructions: 1:50,000-foot grid lines based on Florida state plane
projection, east zone. 1:50,000-foot Universal Transverse Mercator
grid lines, zone 17, datum is NAD 83. 1987 Florida Agency; Culture
is shown on the projected Florida Altimeter Datum. C&D may
be projected using 30 meters scale and 18 meters west as datum
by adding 3000 feet.
This map includes areas in which only temporary buildings are shown.
There may be private waterways within the boundaries of
the Republic of Cuba represented as shown on this map.

1" = 24,000'
CONTOUR INTERVAL, 5 FEET
ELEVATION, MEASURED HEIGHT, DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET - GAUGE 0001 LOW WATER DATUM
THE HORIZONTAL DISTANCE FROM THE POINT OF SOUNDING
TO THE POINT OF THE CURVE IS APPROXIMATELY 1:127
THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80260, OR RESTON, VIRGINIA 20192
A POLAR DISTANCE, HORIZONTAL DISTANCE, AND STRAIGHT LINE DISTANCE ON THE GROUND



ROAD CLASSIFICATION
Heavy Duty Light Duty
Unimproved Bit
U.S. Route State Route

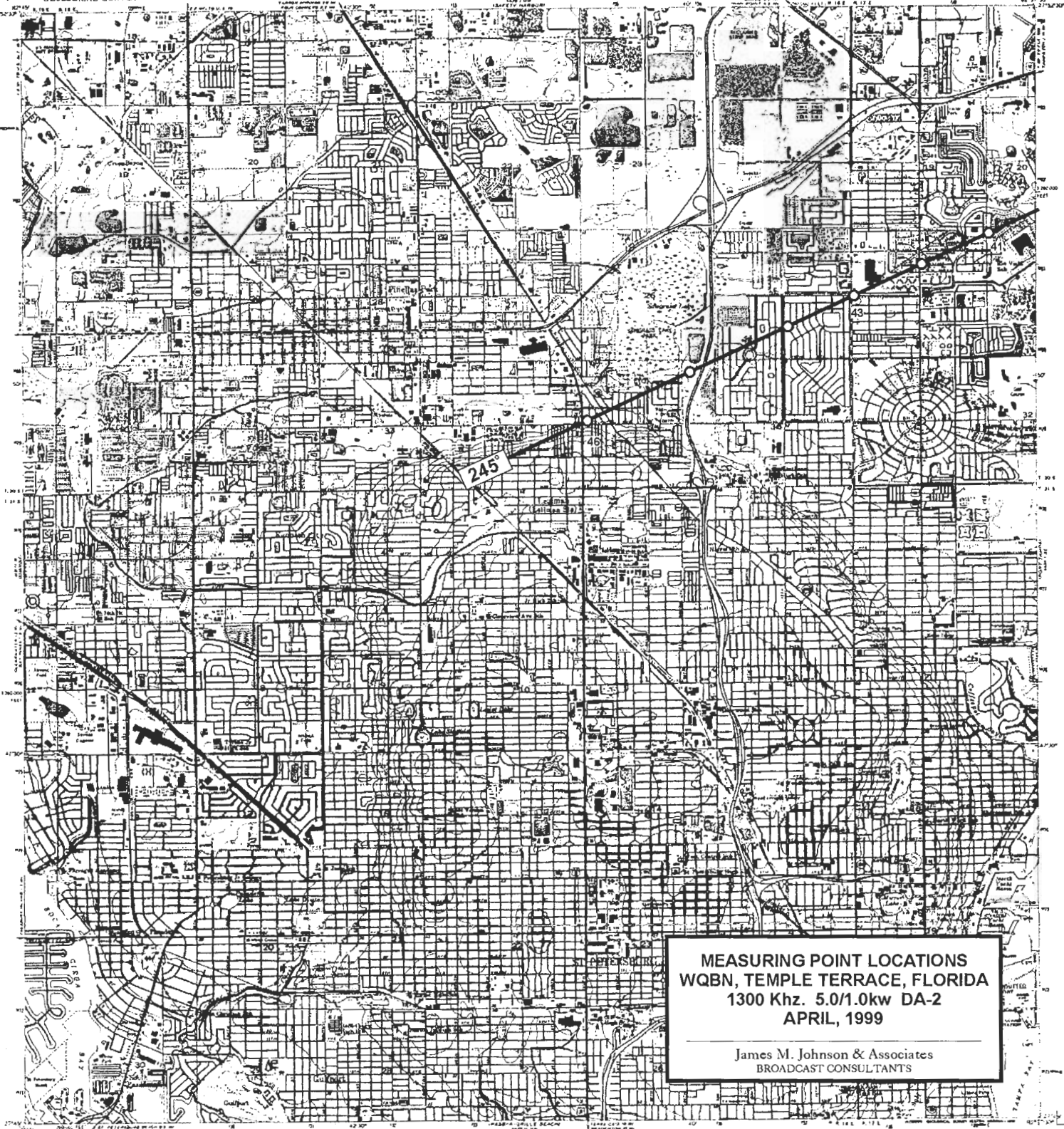


PORT TAMPA, FLA.
82748-943277-5
PHOTODUPLICATION 1988
1995
PHOTODUPLICATION 1981
Data used by 88-165828-1981

EXHIBIT 5M

ST. PETERSBURG QUADRANGLE
FLORIDA—PINELLAS CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS

Map made, edited, and published by the Geological Survey
Controlled by USGS, PINELLAS, and Florida Counties, Survey
Culture and drainage in part compiled from aerial photographs
taken 1954. Topography by photostereoscopy, 1954.
Controlled hydrographic data compiled from 1905 charts 587 (1853),
and 1957 (1953).
This information is not intended for navigation purposes.
Projections: Contour lines 10,000 feet grid (GCS) based on Florida
Coordinate System, used until 1983; Florida Transverse
Mercator grid (TMS) used 1983 to 1987; 1983 North
American Datum. The data on this product have been
checked and are accurate to within 100 feet (30 meters) mean
sea level, except as shown for individual contours.
Red lines indicate areas of which the symbols and markings are shown.
There may be physical obstructions within the boundaries of
the features or State representation shown on this map.

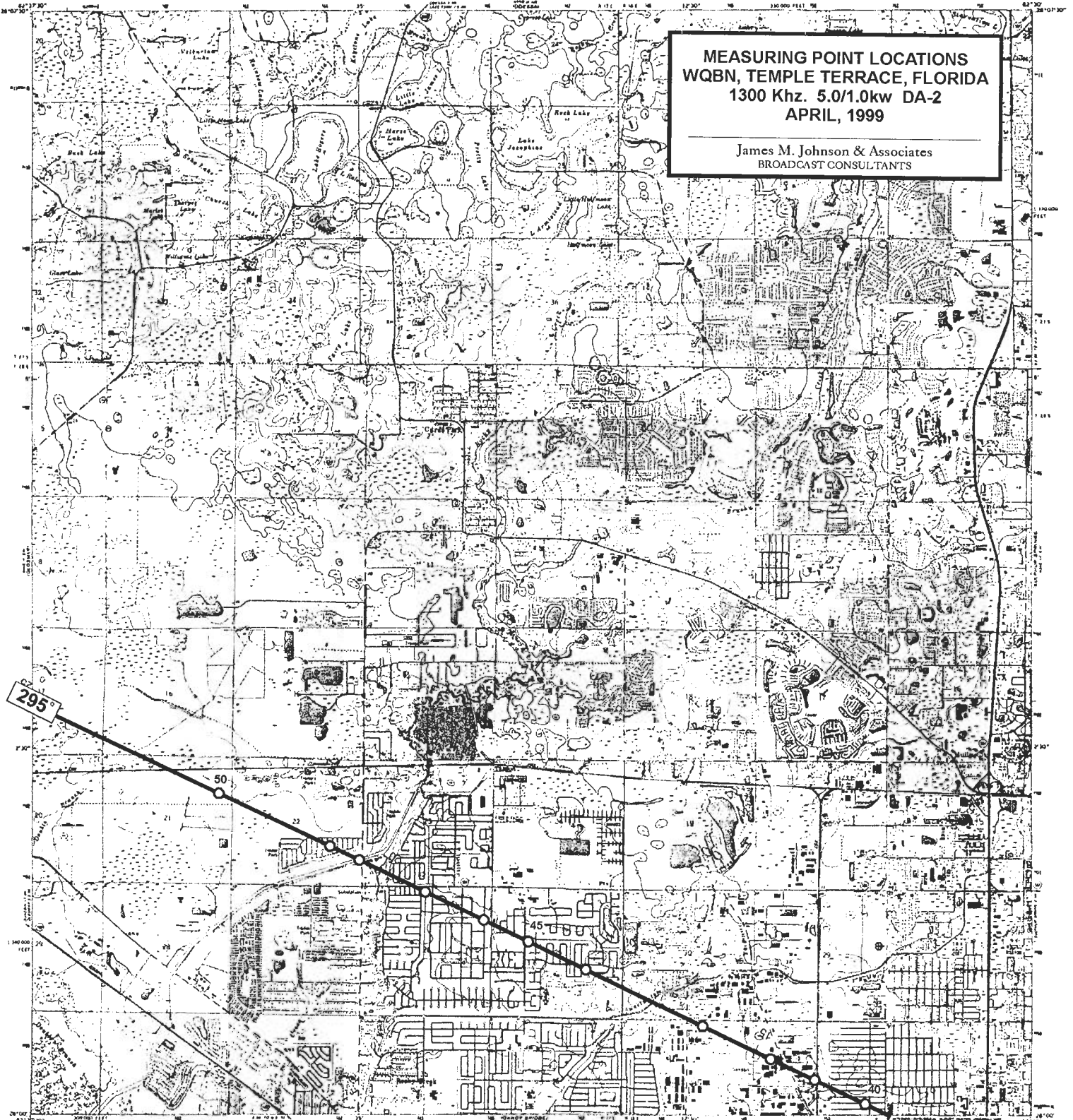
Controlled by USGS, PINELLAS, and Florida Counties, Survey
Controlled by USGS, PINELLAS, and Florida Counties, Survey
Controlled by USGS, PINELLAS, and Florida Counties, Survey

SCALE 1:4000
CONTROLLING DATA: 5.816E
NATIONAL GEODETIC SURVEY, CENTER OF THE
DEPTH CURVES AND SOUNDINGS ON THIS MAP ARE TO MEAN LOWER LOW WATER
MEANING THE LOWEST LOW WATER OF THE NEAP TIDES.
THIS MAP SHOWS THE MEASURING POINT LOCATIONS
FOR THE STATION OF THE GEODETIC SURVEY
CONTROLLED BY THE GEOLOGICAL SURVEY
CONTROLLED BY THE GEOLOGICAL SURVEY
CONTROLLED BY THE GEOLOGICAL SURVEY
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Primary highway all weather. Light duty road all weather.
Road surface. Improved highway.
Secondary highway all weather. Unimproved road for all day
highway.
Interstate Route U.S. Route State Route
GT. PETERSBURG, FLA.
1998
PHOTOGRAPHED 1997
See page 1 of 10 sheets

MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS



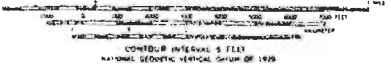
295

50

45

40

Mapped, edited, and published by the Geological Survey
Conceded by USGS and HOUSING
Photography by photogrammetry methods from aerial photographs
taken 1954. Topography by stadia survey 1920.
Personnel project base 10,000 foot grid based on Florida
Coordinate system, zone 1800-Under Universal Transverse
Mercator grid. Zone 17, north of zone 1800. North
American Datum. To place on the official North American
Datum 1983 move the central line 78 meters south and
17 meters east as shown by dashed center line.
Horizontal datum of surface and elevation computed in accordance
with State of Florida specifications from sea level orthographic datum 1985
and other sources. Two independent level lines.
Map scale 1:24,000.
Purple ink indicates extension of other areas.



THIS MAP COMPILED FROM NATIONAL MAP ACTUALLY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
ON VHS COLORADO BOSS OF BOSTON VIRGINIA 1998
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

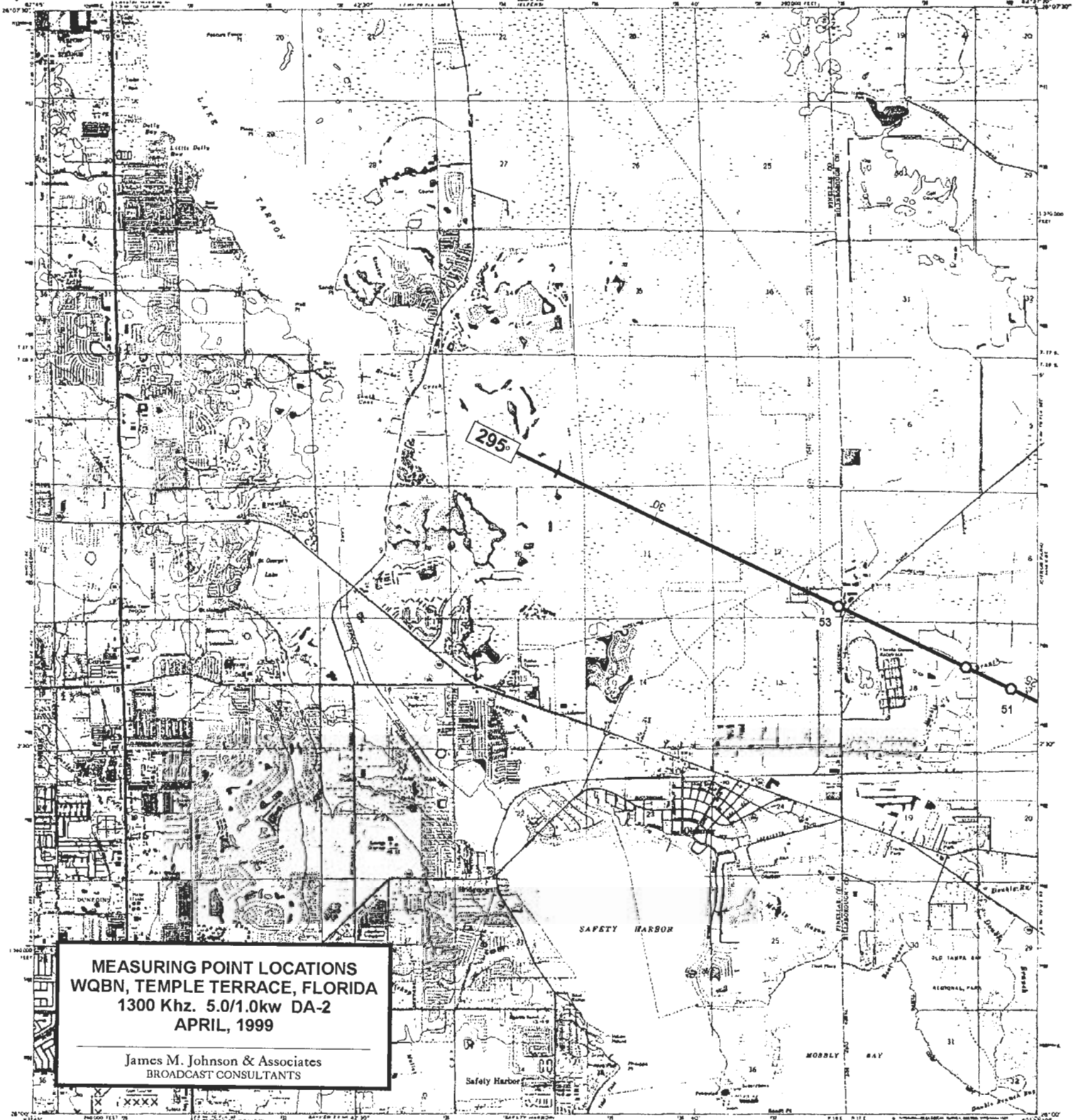
ROAD CLASSIFICATION
Heavy Duty Light Duty
Medium Duty Unimproved Pav
State Road

CITRUS PARK, FLA.
1800 43 11 024
1988
PHOTOREPRODUCED
Data used in this map is from 1987

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

OLDSMAR QUADRANGLE
FLORIDA
7.5 MINUTE SERIES (TOPOGRAPHIC)



MEASURING POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0kw DA-2
APRIL, 1999

James M. Johnson & Associates
 BROADCAST CONSULTANTS

Revised, edited, and published by the Geological Survey
 Compiled by USGS, NDS, HADA, and Florida State Department
 of Transportation
 Photographs by photogrammetric methods from aerial photography
 taken December 1971. Date checked 1974
 Supplemental Aerial Map Service map dated 1943
 Elevation control points data furnished from NDS 68111974
 This information is not intended for navigation purposes
 Projection used: 10 000 000 gird 1414. Florida (zone 18)
 1983M - north-south coordinate 114141
 1:500 scale (vertical) Transverse Mercator grid 8476
 Note: 17. inches in total 1:500 North American Datum
 To show on the printed map, American inch is 1:500
 From the map, 1 inch is 75 meters north and
 15 meters east as shown by distance scale

1:500 scale (vertical) Transverse Mercator grid 8476
 Note: 17. inches in total 1:500 North American Datum
 To show on the printed map, American inch is 1:500
 From the map, 1 inch is 75 meters north and
 15 meters east as shown by distance scale

CONTOUR INTERVAL: 5 FEET
 NATIONAL COASTAL SURVEY, YEAR 1929
 DEPTH CURVES AND SOUNDINGS IN FEET - GAUGED TO MEAN LOW WATER
 BY MEANS OF THE TIDE GAUGE AT TAMPA, FLORIDA
 SOURCE: U.S. COAST AND GEODETIC SURVEY, YEAR 1929
 THIS MAP COMPLETES WITH ALL OTHER MAP ACQUISITION STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY
 DENVER, COLORADO 80225 OR RESTON, VIRGINIA 20192
 A HOLDER (SUSPENDING) TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

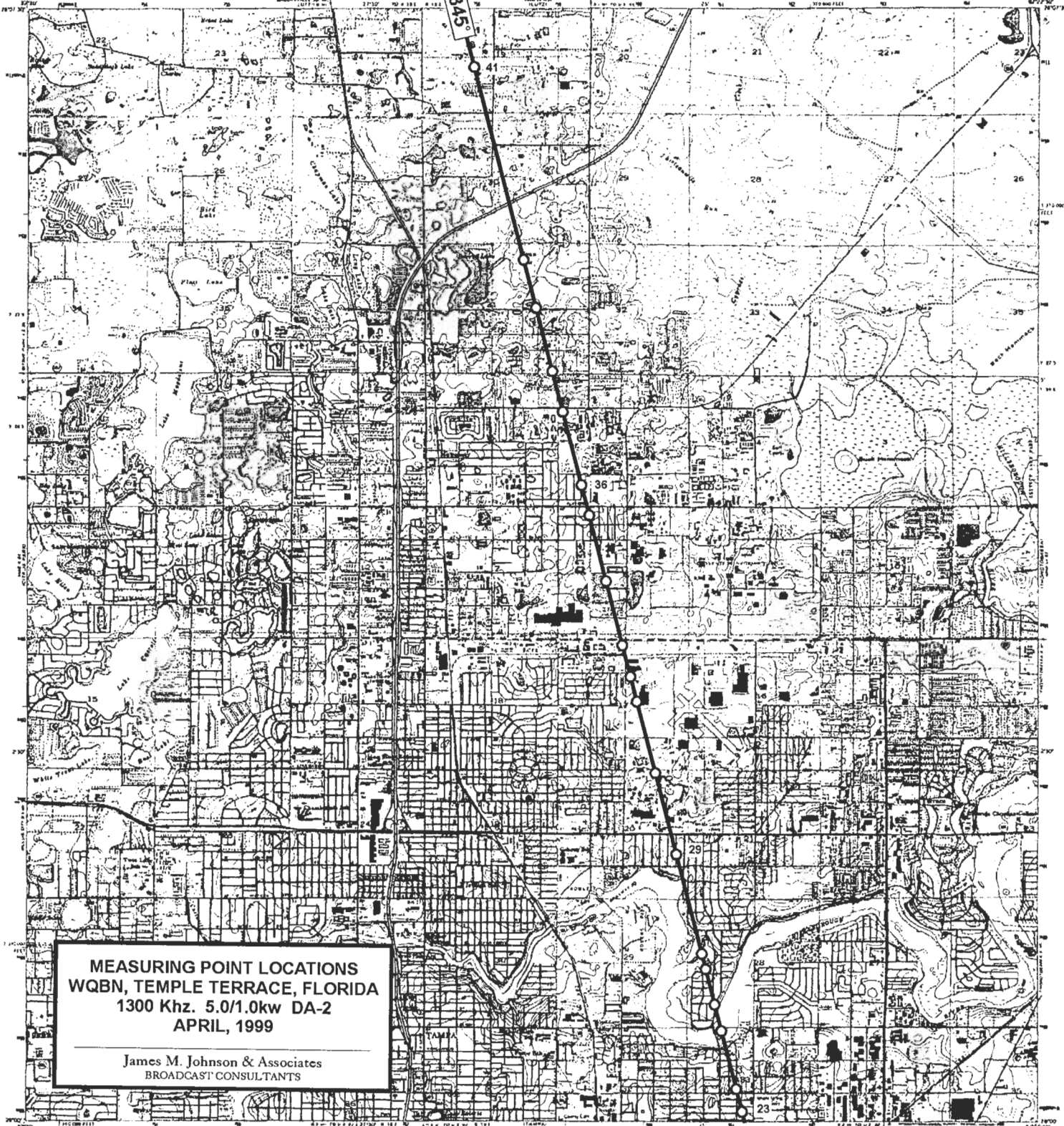
ROAD CLASSIFICATION
 Primary Highway: Light-duty road, Hard surface
 Secondary Highway: Improved surface
 Road Surface: Unimproved road
 Interstate Route: U.S. Route, State Road

OLDSMAR, FLA.
 78024 44-17-024
 1974
 PHOTOGRAPHED 1967
 GSA 5440 1-69-16747

EXHIBIT 5P

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SULPHUR SPRINGS QUADRANGLE
FLORIDA—HILLSBOROUGH CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA
Culture and elevations are not controlled from aerial photographs
taken 1928. Topography by aneroid barometer 1974
Photographic projection 10,000-foot grid based on Florida
statewide system, used since 1922 under Universal Transverse
Mercator grid system, zone 17, shown as blue 180° north
American Datum. In place on the projected north American
Datum 1983 using the projection zone 20, shown as blue and
17 meters east as shown by dashed center line.
Red line indicates areas in which one or both bearings are shown
Bearing shown in purple and additional distances in cyan
with blue dots in blue appear from aerial photographs
taken 1928 and other sources. This information is not for use
without 1987
People and vegetation depicted on urban areas



SCALE 1:24,000
CONTINUOUS VERTICAL SECTION OF 1928
NATIONAL GEODETIC VERTICAL DATUM OF 1928

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DIVISION OF GEOGRAPHIC INFORMATION SYSTEMS, RESTON, VIRGINIA 20192
A COLOR-BRANDING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



ROAD CLASSIFICATION
Heavy duty Light duty
Medium duty Unimproved dirt
○ Interstate Route □ U.S. Route ○ State Route

W. A. READ, JR. & ASSOCIATES
510 South Central Avenue
Baton Rouge, Louisiana 70801
JAMES 533-0763

SULPHUR SPRINGS, FLA.
7808-A-11-024
1988
PHOTOREPRODUCED
FROM ORIGINAL BY SERIES 1001

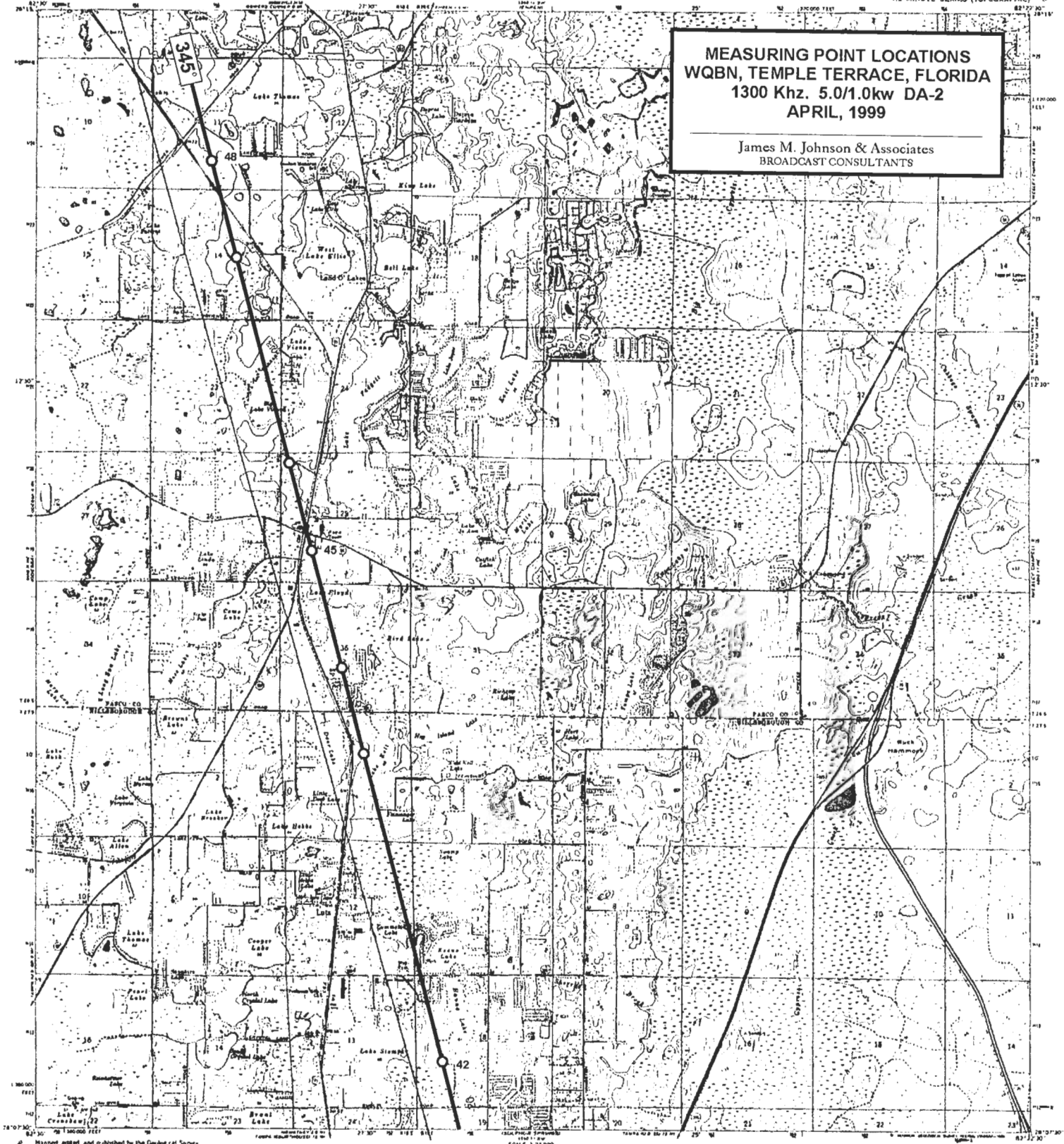
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF FLORIDA

FLORIDA
LUTZ QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

MEASURING POINT LOCATIONS WQBN, TEMPLE TERRACE, FLORIDA 1300 Khz. 5.0/1.0kw DA-2 APRIL, 1999

James M. Johnson & Associates
BROADCAST CONSULTANTS



Revised, edited, and published by the Geologic Survey
Conformed to USGS, NOS/NOAA, and Florida Department of
Transportation
Map prepared by photogrammetric methods from aerial photographs
taken December 1974. Lake levelled 1974.
Contours from Army Map Service map dated 1943
Projection and Spheroid used as follows: For the unshaded areas,
use the following:
1983-meter Universal Transverse Mercator grid (U.S.)
zone 17, datum is PWS, 1927 North American Datum
For the shaded areas, use the following:
1983-meter UTM zone 17, datum is PWS, 1927 North American Datum
and the projection is UTM zone 17, datum is PWS, 1927 North American Datum
and 17 meters east as shown by dashed contour lines.
If not shaded, then unshaded contour lines and field lines where
generally shown on aerial photographs. This information is structured
for use in GIS applications.

Revised, edited, and published by the Geologic Survey
Conformed to USGS, NOS/NOAA, and Florida Department of
Transportation
Map prepared by photogrammetric methods from aerial photographs
taken December 1974. Lake levelled 1974.
Contours from Army Map Service map dated 1943
Projection and Spheroid used as follows: For the unshaded areas,
use the following:
1983-meter Universal Transverse Mercator grid (U.S.)
zone 17, datum is PWS, 1927 North American Datum
For the shaded areas, use the following:
1983-meter UTM zone 17, datum is PWS, 1927 North American Datum
and the projection is UTM zone 17, datum is PWS, 1927 North American Datum
and 17 meters east as shown by dashed contour lines.
If not shaded, then unshaded contour lines and field lines where
generally shown on aerial photographs. This information is structured
for use in GIS applications.

SCALE 1:24,000
CENTIMETER IMPERIAL SYSTEM
NATIONAL GEODETIC VERTICAL DATUM OF 1988

ROAD CLASSIFICATION
Primary highway Light duty road, road or
hard surface unpaved surface
Secondary highway Unimproved trail
Hard surface Unimproved trail
Unimproved trail
Unimproved trail



LUTZ, FLA.
2807 R1 7.5Q
1974
PHOTOGRAPHIC SURVEY
DATE 1974 BY THE SURVEY

THIS MAP CONFORMS WITH NATIONAL MAP ACTUARY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO BY THE NATIONAL MAP ACTUARY STANDARDS
A SOURCE OF TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

EXHIBIT 6

TABULATION OF DAYTIME FIELD STRENGTH DATA

All readings are 24 hour Eastern Daylight Time.

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 32 Degrees

| Point No. | Dist. Km | 1.25 Kw-ND | | | 5.4 Kw-DA | | | Ratio DA/ND |
|--------------|-------------|------------|---------|------|-----------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.57 | 540.0 | 4/21/99 | 1530 | | | | |
| 2 | 0.77 | 340.0 | 4/21/99 | 1527 | | | | |
| 3 | 0.90 | 280.0 | 4/21/99 | 1525 | | | | |
| 4 | 1.33 | 350.0 | 4/21/99 | 1433 | 460.0 | 4/21/99 | 1433 | 1.314 |
| 5 | 1.69 | 138.0 | 4/21/99 | 934 | 130.0 | 4/21/99 | 934 | 0.942 |
| 6 | 1.80 | 148.0 | 4/21/99 | 937 | 130.0 | 4/21/99 | 937 | 0.878 |
| 7 | 2.04 | 110.0 | 4/21/99 | 941 | 80.0 | 4/21/99 | 941 | 0.727 |
| 8 | 2.14 | 109.0 | 4/21/99 | 939 | 104.0 | 4/21/99 | 939 | 0.954 |
| 9 | 2.25 | 125.0 | 4/21/99 | 945 | 116.0 | 4/21/99 | 945 | 0.928 |
| 10 | 2.44 | 100.0 | 4/21/99 | 953 | 95.0 | 4/21/99 | 953 | 0.950 |
| 11 | 2.78 | 85.0 | 4/21/99 | 956 | 87.0 | 4/21/99 | 956 | 1.024 |
| 12 | 2.98 | 80.0 | 4/21/99 | 1000 | 72.0 | 4/21/99 | 1000 | 0.900 |
| 13 | 3.11 | 62.0 | 4/21/99 | 1003 | 69.0 | 4/21/99 | 1003 | 1.113 |
| 14 | 3.17 | 66.0 | 4/21/99 | 1004 | 66.0 | 4/21/99 | 1004 | 1.000 |
| 15 | 3.41 | 70.0 | 4/21/99 | 1006 | 64.0 | 4/21/99 | 1006 | 0.914 |
| 16 | 3.53 | 65.0 | 4/21/99 | 1012 | 59.0 | 4/21/99 | 1012 | 0.908 |
| 17 | 3.60 | 65.0 | 4/21/99 | 1014 | 64.0 | 4/21/99 | 1014 | 0.985 |
| 18 | 3.87 | 56.0 | 4/21/99 | 1016 | 64.0 | 4/21/99 | 1016 | 1.143 |
| 19 | 4.17 | 53.0 | 4/21/99 | 1621 | 42.0 | 4/21/99 | 1621 | 0.792 |
| 20 | 4.47 | 37.0 | 4/21/99 | 1625 | 24.0 | 4/21/99 | 1625 | 0.649 |
| 21 | 4.92 | 42.0 | 4/21/99 | 1634 | 25.5 | 4/21/99 | 1634 | 0.607 |
| 22 | 5.00 | 35.0 | 4/21/99 | 1631 | 22.5 | 4/21/99 | 1631 | 0.643 |
| 23 | 5.17 | 32.0 | 4/21/99 | 1644 | 21.8 | 4/21/99 | 1644 | 0.681 |
| 24 | 5.36 | 30.0 | 4/21/99 | 1646 | 19.2 | 4/21/99 | 1646 | 0.640 |
| 25 | 5.66 | 30.0 | 4/21/99 | 1647 | 23.5 | 4/21/99 | 1647 | 0.783 |
| 26 | 5.98 | 26.0 | 4/21/99 | 1651 | 20.2 | 4/21/99 | 1651 | 0.777 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
 TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 32 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|-------|
| | | mV/m | Date | Time | mV/m | Date | Time | DA/ND |
| 27 | 6.13 | 31.0 | 4/21/99 | 1653 | 29.0 | 4/21/99 | 1653 | 0.935 |
| 28 | 6.84 | 24.5 | 4/21/99 | 1027 | 22.5 | 4/21/99 | 1027 | 0.918 |
| 29 | MP 7.13 | 26.0 | 4/21/99 | 1024 | 23.0 | 4/21/99 | 1024 | 0.885 |
| 30 | 7.46 | 22.2 | 4/21/99 | 1030 | 21.8 | 4/21/99 | 1030 | 0.982 |
| 31 | 7.69 | 21.5 | 4/21/99 | 1034 | 19.5 | 4/21/99 | 1034 | 0.907 |
| 32 | 11.3 | 11.0 | 4/21/99 | 1041 | 10.0 | 4/21/99 | 1041 | 0.909 |
| 33 | 11.6 | 10.0 | 4/21/99 | 1045 | 9.5 | 4/21/99 | 1045 | 0.950 |
| 34 | 12.4 | 6.90 | 4/21/99 | 1059 | 5.0 | 4/21/99 | 1059 | 0.725 |
| 35 | 13.9 | 4.40 | 4/21/99 | 1103 | 4.5 | 4/21/99 | 1103 | 1.023 |
| 36 | 14.9 | 3.70 | 4/21/99 | 1114 | 3.7 | 4/21/99 | 1114 | 1.000 |
| 37 | 15.8 | 3.00 | 4/21/99 | 1120 | 2.5 | 4/21/99 | 1120 | 0.833 |
| 38 | 33.2 | 0.57 | 4/21/99 | 1142 | 0.79 | 4/21/99 | 1142 | 1.386 |
| 39 | 34.0 | 0.50 | 4/21/99 | 1150 | 0.66 | 4/21/99 | 1150 | 1.320 |

Average Ratio= 0.917

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 45 Degrees

| Point No. | Dist. Km | 1.25 Kw-ND | | | 5.4 Kw-DA | | | Ratio DA/ND |
|--------------|-------------|------------|---------|------|-----------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.43 | 720.0 | 4/24/99 | 1536 | | | | |
| 2 | 0.67 | 440.0 | 4/24/99 | 1533 | | | | |
| 3 | 0.92 | 280.0 | 4/24/99 | 1520 | | | | |
| 4 | 1.85 | 170.0 | 4/24/99 | 1516 | | | | |
| 5 | 2.49 | 190.0 | 4/24/99 | 1430 | 145.0 | 4/24/99 | 1430 | 0.763 |
| 6 | 2.65 | 92.0 | 4/21/99 | 1737 | 88.0 | 4/21/99 | 1737 | 0.957 |
| 7 | 2.87 | 80.0 | 4/21/99 | 1734 | 70.0 | 4/21/99 | 1734 | 0.875 |
| 8 | 3.08 | 90.0 | 4/21/99 | 1723 | 85.0 | 4/21/99 | 1723 | 0.944 |
| 9 | 3.41 | 80.0 | 4/21/99 | 1726 | 63.0 | 4/21/99 | 1726 | 0.788 |
| 10 | 3.77 | 57.0 | 4/21/99 | 1730 | 30.0 | 4/21/99 | 1730 | 0.526 |
| 11 | 3.88 | 58.0 | 4/21/99 | 1707 | 34.0 | 4/21/99 | 1707 | 0.586 |
| 12 | 4.10 | 67.0 | 4/21/99 | 1712 | 38.0 | 4/21/99 | 1712 | 0.567 |
| 13 | 4.19 | 52.0 | 4/21/99 | 1532 | 32.0 | 4/21/99 | 1532 | 0.615 |
| 14 | 4.31 | 48.0 | 4/21/99 | 1731 | 30.0 | 4/21/99 | 1731 | 0.625 |
| 15 | 4.50 | 58.0 | 4/21/99 | 1724 | 40.0 | 4/21/99 | 1724 | 0.690 |
| 16 | 4.91 | 40.0 | 4/21/99 | 1722 | 24.0 | 4/21/99 | 1722 | 0.600 |
| 17 | 5.05 | 32.0 | 4/21/99 | 1716 | 19.0 | 4/21/99 | 1716 | 0.594 |
| 18 | 5.14 | 40.0 | 4/21/99 | 1718 | 24.0 | 4/21/99 | 1718 | 0.600 |
| 19 | 5.59 | 29.0 | 4/21/99 | 1711 | 22.0 | 4/21/99 | 1711 | 0.759 |
| 20 | 6.07 | 32.0 | 4/21/99 | 1705 | 22.0 | 4/21/99 | 1705 | 0.688 |
| 21 | 6.69 | 23.5 | 4/21/99 | 1700 | 16.5 | 4/21/99 | 1700 | 0.702 |
| 22 | 7.01 | 23.5 | 4/21/99 | 1457 | 14.0 | 4/21/99 | 1457 | 0.596 |
| 23 | 7.40 | 18.0 | 4/21/99 | 1454 | 11.0 | 4/21/99 | 1454 | 0.611 |
| 24 | 7.88 | 18.0 | 4/21/99 | 1451 | 9.8 | 4/21/99 | 1451 | 0.544 |
| 25 | 9.02 | 12.5 | 4/21/99 | 1409 | 5.4 | 4/21/99 | 1409 | 0.432 |
| 26 | 10.2 | 11.0 | 4/21/99 | 1400 | 4.7 | 4/21/99 | 1400 | 0.427 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 45 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|-------|
| | | mV/m | Date | Time | mV/m | Date | Time | DA/ND |
| 27 | 12.7 | 3.70 | 4/21/99 | 1350 | 2.00 | 4/21/99 | 1350 | 0.541 |
| 28 | 13.0 | 3.20 | 4/21/99 | 1346 | 2.00 | 4/21/99 | 1346 | 0.625 |
| 29 | 13.7 | 4.00 | 4/21/99 | 1341 | 4.60 | 4/21/99 | 1341 | 1.150 |
| 30 | 14.6 | 2.60 | 4/21/99 | 1331 | 2.60 | 4/21/99 | 1331 | 1.000 |
| 31 | 16.0 | 1.95 | 4/21/99 | 1327 | 1.90 | 4/21/99 | 1327 | 0.974 |
| 32 | 20.4 | 1.45 | 4/21/99 | 1316 | 1.30 | 4/21/99 | 1316 | 0.897 |
| 33 | 21.4 | 1.02 | 4/21/99 | 1312 | 1.00 | 4/21/99 | 1312 | 0.980 |
| 34 | 23.5 | 1.09 | 4/21/99 | 1306 | 1.05 | 4/21/99 | 1306 | 0.963 |
| 35 | 25.8 | 1.02 | 4/21/99 | 1301 | 1.00 | 4/21/99 | 1301 | 0.980 |
| 36 | 33.5 | 0.41 | 4/21/99 | 1248 | 0.23 | 4/21/99 | 1248 | 0.561 |
| 37 | 35.2 | 0.46 | 4/21/99 | 1242 | 0.28 | 4/21/99 | 1242 | 0.609 |

Average Ratio = 0.720

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 115 Degrees

| Point No. | Dist. Km | 1.25 Kw-ND | | | 5.4 Kw-DA | | | Ratio DA/ND |
|--------------|-------------|------------|---------|------|-----------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.36 | 1000.0 | 4/23/99 | 1307 | | | | |
| 2 | 0.40 | 900.0 | 4/23/99 | 1308 | | | | |
| 3 | 0.45 | 820.0 | 4/23/99 | 1309 | | | | |
| 4 | 0.62 | 500.0 | 4/21/99 | 1708 | | | | |
| 5 | 0.76 | 430.0 | 4/21/99 | 1706 | | | | |
| 6 | 0.97 | 318.0 | 4/21/99 | 1700 | 69.0 | 4/21/99 | 1700 | 0.217 |
| 7 | 1.13 | 262.0 | 4/21/99 | 1658 | 70.0 | 4/21/99 | 1658 | 0.267 |
| 8 | 1.25 | 228.0 | 4/21/99 | 1656 | 63.0 | 4/21/99 | 1656 | 0.276 |
| 9 | 1.35 | 208.0 | 4/21/99 | 1653 | 57.0 | 4/21/99 | 1653 | 0.274 |
| 10 | 1.52 | 168.0 | 4/21/99 | 1650 | 46.0 | 4/21/99 | 1650 | 0.274 |
| 11 | 1.65 | 140.0 | 4/21/99 | 1645 | 46.5 | 4/21/99 | 1645 | 0.332 |
| 12 | 1.75 | 129.0 | 4/21/99 | 1644 | 44.0 | 4/21/99 | 1644 | 0.341 |
| 13 | 1.91 | 118.0 | 4/21/99 | 1631 | 68.0 | 4/21/99 | 1631 | 0.576 |
| 14 | 2.03 | 101.0 | 4/21/99 | 1628 | 27.5 | 4/21/99 | 1628 | 0.272 |
| 15 | 2.21 | 102.0 | 4/21/99 | 1625 | 28.0 | 4/21/99 | 1625 | 0.275 |
| 16 | 2.38 | 117.0 | 4/21/99 | 1623 | 26.0 | 4/21/99 | 1623 | 0.222 |
| 17 | 2.51 | 100.0 | 4/21/99 | 1621 | 15.5 | 4/21/99 | 1621 | 0.155 |
| 18 | 2.77 | 96.0 | 4/21/99 | 1609 | 12.0 | 4/21/99 | 1609 | 0.125 |
| 19 | 2.88 | 92.0 | 4/21/99 | 1537 | 10.0 | 4/21/99 | 1537 | 0.109 |
| 20 | 2.98 | 82.0 | 4/21/99 | 1605 | 4.00 | 4/21/99 | 1605 | 0.049 |
| 21 | 3.11 | 80.0 | 4/21/99 | 1542 | 6.00 | 4/21/99 | 1542 | 0.075 |
| 22 | 3.22 | 90.0 | 4/21/99 | 1532 | 9.50 | 4/21/99 | 1532 | 0.106 |
| 23 | 3.31 | 77.0 | 4/21/99 | 1547 | 7.40 | 4/21/99 | 1547 | 0.096 |
| 24 | 3.42 | 70.0 | 4/21/99 | 1550 | 5.80 | 4/21/99 | 1550 | 0.083 |
| 25 | 3.50 | 51.0 | 4/21/99 | 1527 | 4.30 | 4/21/99 | 1527 | 0.084 |
| 26 | 3.67 | 62.0 | 4/21/99 | 1556 | 10.5 | 4/21/99 | 1556 | 0.169 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 115 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|-------|
| | | mV/m | Date | Time | mV/m | Date | Time | DA/ND |
| 27 | 3.89 | 70.0 | 4/21/99 | 1507 | 8.40 | 4/21/99 | 1507 | 0.120 |
| 28 | 4.04 | 62.0 | 4/21/99 | 1512 | 6.80 | 4/21/99 | 1512 | 0.110 |
| 29 | 4.20 | 50.0 | 4/21/99 | 1515 | 6.00 | 4/21/99 | 1515 | 0.120 |
| 30 | MP 4.83 | 51.0 | 4/21/99 | 1352 | 9.00 | 4/21/99 | 1352 | 0.176 |
| 31 | 4.88 | 47.0 | 4/21/99 | 1354 | 10.00 | 4/21/99 | 1354 | 0.213 |
| 32 | 5.50 | 40.0 | 4/21/99 | 1337 | 6.20 | 4/21/99 | 1337 | 0.155 |
| 33 | 5.67 | 36.5 | 4/21/99 | 1335 | 7.00 | 4/21/99 | 1335 | 0.192 |
| 34 | 5.93 | 28.2 | 4/21/99 | 1332 | 8.60 | 4/21/99 | 1332 | 0.305 |
| 35 | 6.49 | 27.7 | 4/21/99 | 1327 | 9.90 | 4/21/99 | 1327 | 0.357 |
| 36 | 7.54 | 23.8 | 4/21/99 | 1319 | 10.50 | 4/21/99 | 1319 | 0.441 |
| 37 | 7.98 | 17.0 | 4/21/99 | 1311 | 7.20 | 4/21/99 | 1311 | 0.424 |
| 38 | 8.45 | 15.8 | 4/21/99 | 1303 | 6.30 | 4/21/99 | 1303 | 0.399 |
| 39 | 10.2 | 11.2 | 4/21/99 | 1253 | 3.10 | 4/21/99 | 1253 | 0.277 |
| 40 | 10.9 | 12.5 | 4/21/99 | 1149 | 3.70 | 4/21/99 | 1149 | 0.296 |
| 41 | 11.9 | 8.30 | 4/21/99 | 1143 | 2.70 | 4/21/99 | 1143 | 0.325 |
| 42 | 12.9 | 8.30 | 4/21/99 | 1136 | 2.45 | 4/21/99 | 1136 | 0.295 |
| 43 | 14.0 | 5.70 | 4/21/99 | 1129 | 1.65 | 4/21/99 | 1129 | 0.289 |
| 44 | 15.0 | 5.18 | 4/21/99 | 1124 | 1.20 | 4/21/99 | 1124 | 0.232 |
| 45 | 16.0 | 4.10 | 4/21/99 | 1117 | 1.25 | 4/21/99 | 1117 | 0.305 |
| 46 | 16.9 | 4.20 | 4/21/99 | 1111 | 1.20 | 4/21/99 | 1111 | 0.286 |
| 47 | 17.5 | 3.50 | 4/21/99 | 1101 | 0.95 | 4/21/99 | 1101 | 0.271 |
| 48 | 18.2 | 2.80 | 4/21/99 | 1054 | 0.58 | 4/21/99 | 1054 | 0.207 |
| 49 | 19.5 | 2.175 | 4/21/99 | 1048 | 0.21 | 4/21/99 | 1048 | 0.097 |
| 50 | 20.3 | 1.90 | 4/21/99 | 1043 | 0.12 | 4/21/99 | 1043 | 0.063 |
| 51 | 21.5 | 1.29 | 4/21/99 | 1031 | 0.23 | 4/21/99 | 1031 | 0.178 |
| 52 | 22.4 | 1.20 | 4/21/99 | 1004 | 0.27 | 4/21/99 | 1004 | 0.225 |
| 53 | 23.1 | 1.08 | 4/21/99 | 1018 | 0.29 | 4/21/99 | 1018 | 0.269 |
| 54 | 24.8 | 0.80 | 4/21/99 | 935 | 0.17 | 4/21/99 | 935 | 0.213 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 115 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|-------------|-------------|------------------|-------------|-------------|----------------|
| | | <u>mV/m</u> | <u>Date</u> | <u>Time</u> | <u>mV/m</u> | <u>Date</u> | <u>Time</u> | |
| 55 | 25.5 | 0.75 | 4/21/99 | 930 | 0.15 | 4/21/99 | 930 | 0.200 |
| 56 | 25.9 | 0.74 | 4/21/99 | 926 | 0.16 | 4/21/99 | 926 | 0.216 |
| 57 | 27.2 | 0.76 | 4/21/99 | 920 | 0.13 | 4/21/99 | 920 | 0.171 |

Average Ratio = 0.227

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 185 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.53 | 450.0 | 4/24/99 | 1325 | | | | |
| 2 | 0.70 | 460.0 | 4/24/99 | 1330 | | | | |
| 3 | 1.25 | 200.0 | 4/24/99 | 1337 | | | | |
| 4 | 1.62 | 140.0 | 4/24/99 | 1348 | | | | |
| 5 | 1.77 | 145.0 | 4/24/99 | 1351 | 155.0 | 4/24/99 | 1351 | 1.069 |
| 6 | 1.95 | 130.0 | 4/24/99 | 1353 | 145.0 | 4/24/99 | 1353 | 1.115 |
| 7 | 2.10 | 118.0 | 4/24/99 | 1355 | 128.0 | 4/24/99 | 1355 | 1.085 |
| 8 | 2.29 | 110.0 | 4/24/99 | 1357 | 118.0 | 4/24/99 | 1357 | 1.073 |
| 9 | 2.55 | 112.0 | 4/24/99 | 1539 | 137.0 | 4/24/99 | 1539 | 1.223 |
| 10 | 2.75 | 68.0 | 4/22/99 | 1541 | 75.0 | 4/22/99 | 1541 | 1.103 |
| 11 | 2.81 | 98.0 | 4/22/99 | 1534 | 105.0 | 4/22/99 | 1534 | 1.071 |
| 12 | 3.18 | 91.0 | 4/22/99 | 1529 | 99.0 | 4/22/99 | 1529 | 1.088 |
| 13 | 3.57 | 78.0 | 4/22/99 | 1517 | 82.0 | 4/22/99 | 1517 | 1.051 |
| 14 | 3.66 | 75.0 | 4/22/99 | 1519 | 81.0 | 4/22/99 | 1519 | 1.080 |
| 15 | 4.05 | 53.5 | 4/22/99 | 1512 | 52.0 | 4/22/99 | 1512 | 0.972 |
| 16 | 4.27 | 46.0 | 4/22/99 | 1508 | 51.0 | 4/22/99 | 1508 | 1.109 |
| 17 | 4.62 | 58.0 | 4/22/99 | 1503 | 60.0 | 4/22/99 | 1503 | 1.034 |
| 18 | 5.23 | 55.5 | 4/22/99 | 1456 | 52.0 | 4/22/99 | 1456 | 0.937 |
| 19 | 5.56 | 44.5 | 4/22/99 | 1405 | 56.0 | 4/22/99 | 1405 | 1.258 |
| 20 | 5.86 | 41.0 | 4/22/99 | 1402 | 50.5 | 4/22/99 | 1402 | 1.232 |
| 21 | 6.16 | 33.5 | 4/22/99 | 1357 | 45.0 | 4/22/99 | 1357 | 1.343 |
| 22 | 9.18 | 23.0 | 4/24/99 | 958 | 28.0 | 4/24/99 | 958 | 1.217 |
| 23 | 9.50 | 22.0 | 4/24/99 | 954 | 24.5 | 4/24/99 | 954 | 1.114 |
| 24 | 10.6 | 20.5 | 4/24/99 | 950 | 17.0 | 4/24/99 | 950 | 0.829 |
| 25 | 11.5 | 17.5 | 4/24/99 | 1006 | 23.0 | 4/24/99 | 1006 | 1.314 |
| 26 | 12.0 | 19.5 | 4/24/99 | 1008 | 22.5 | 4/24/99 | 1008 | 1.154 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 185 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 27 | 13.0 | 14.5 | 4/24/99 | 1010 | 11.0 | 4/24/99 | 1010 | 0.759 |
| 28 | 14.0 | 16.0 | 4/24/99 | 1012 | 17.0 | 4/24/99 | 1012 | 1.063 |
| 29 | 14.9 | 15.0 | 4/24/99 | 1014 | 15.0 | 4/24/99 | 1014 | 1.000 |
| 30 | 17.3 | 11.5 | 4/24/99 | 1020 | 9.5 | 4/24/99 | 1020 | 0.826 |
| 31 | 18.8 | 11.5 | 4/22/99 | 1322 | 11.2 | 4/22/99 | 1322 | 0.974 |
| 32 | 19.8 | 10.1 | 4/22/99 | 1313 | 11.1 | 4/22/99 | 1313 | 1.099 |
| 33 | 20.5 | 11.5 | 4/22/99 | 1302 | 11.8 | 4/22/99 | 1302 | 1.026 |
| 34 | 21.7 | 10.0 | 4/22/99 | 1254 | 9.8 | 4/22/99 | 1254 | 0.980 |
| 35 | 22.4 | 9.4 | 4/22/99 | 1249 | 8.8 | 4/22/99 | 1249 | 0.936 |
| 36 | 23.8 | 7.7 | 4/22/99 | 1242 | 6.2 | 4/22/99 | 1242 | 0.805 |
| 37 | 24.3 | 7.4 | 4/22/99 | 1239 | 5.9 | 4/22/99 | 1239 | 0.797 |
| 38 | 25.2 | 5.3 | 4/22/99 | 1226 | 6.3 | 4/22/99 | 1226 | 1.189 |
| 39 | 26.2 | 4.6 | 4/22/99 | 1219 | 5.4 | 4/22/99 | 1219 | 1.174 |
| 40 | 27.1 | 5.6 | 4/22/99 | 1213 | 5.8 | 4/22/99 | 1213 | 1.036 |
| 41 | 28.2 | 4.7 | 4/22/99 | 1206 | 5.2 | 4/22/99 | 1206 | 1.106 |

Average Ratio= 1.061

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 198 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.50 | 560.0 | 4/24/99 | 1407 | | | | |
| 2 | 0.59 | 470.0 | 4/20/99 | 1735 | | | | |
| 3 | 0.67 | 410.0 | 4/24/99 | 1411 | | | | |
| 4 | 1.15 | 260.0 | 4/20/99 | 1726 | 325.0 | 4/20/99 | 1726 | 1.250 |
| 5 | 1.30 | 210.0 | 4/20/99 | 1722 | 280.0 | 4/20/99 | 1722 | 1.333 |
| 6 | 1.42 | 225.0 | 4/20/99 | 1717 | 280.0 | 4/20/99 | 1717 | 1.244 |
| 7 | 1.62 | 178.0 | 4/20/99 | 1709 | 245.0 | 4/20/99 | 1709 | 1.376 |
| 8 | 1.75 | 115.0 | 4/20/99 | 1706 | 135.0 | 4/20/99 | 1706 | 1.174 |
| 9 | 1.86 | 125.0 | 4/20/99 | 1702 | 160.0 | 4/20/99 | 1702 | 1.280 |
| 10 | 2.03 | 140.0 | 4/20/99 | 1659 | 188.0 | 4/20/99 | 1659 | 1.343 |
| 11 | 2.22 | 125.0 | 4/20/99 | 1652 | 170.0 | 4/20/99 | 1652 | 1.360 |
| 12 | 2.35 | 92.0 | 4/20/99 | 1649 | 115.0 | 4/20/99 | 1649 | 1.250 |
| 13 | MP 2.81 | 105.0 | 4/20/99 | 1641 | 125.0 | 4/20/99 | 1641 | 1.190 |
| 14 | 2.95 | 93.0 | 4/20/99 | 1637 | 110.0 | 4/20/99 | 1637 | 1.183 |
| 15 | 3.00 | 85.0 | 4/20/99 | 1631 | 110.0 | 4/20/99 | 1631 | 1.294 |
| 16 | 3.27 | 80.0 | 4/20/99 | 1624 | 105.0 | 4/20/99 | 1624 | 1.313 |
| 17 | 3.82 | 50.0 | 4/20/99 | 1615 | 70.0 | 4/20/99 | 1615 | 1.400 |
| 18 | 4.21 | 83.0 | 4/20/99 | 1610 | 110.0 | 4/20/99 | 1610 | 1.325 |
| 19 | 4.84 | 68.0 | 4/20/99 | 1604 | 88.0 | 4/20/99 | 1604 | 1.294 |
| 20 | 5.21 | 42.0 | 4/20/99 | 1553 | 57.0 | 4/20/99 | 1553 | 1.357 |
| 21 | 5.44 | 50.0 | 4/20/99 | 1548 | 65.0 | 4/20/99 | 1548 | 1.300 |
| 22 | 5.85 | 51.0 | 4/24/99 | 937 | 65.0 | 4/24/99 | 937 | 1.275 |
| 23 | 6.00 | 49.0 | 4/24/99 | 935 | 57.0 | 4/24/99 | 935 | 1.163 |
| 24 | 6.50 | 46.0 | 4/24/99 | 934 | 60.0 | 4/24/99 | 934 | 1.304 |
| 25 | 7.00 | 36.5 | 4/24/99 | 933 | 45.0 | 4/24/99 | 933 | 1.233 |
| 26 | 7.50 | 33.0 | 4/24/99 | 931 | 41.0 | 4/24/99 | 931 | 1.242 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 198 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 27 | 8.00 | 29.0 | 4/24/99 | 929 | 35.0 | 4/24/99 | 929 | 1.207 |
| 28 | 8.55 | 29.0 | 4/24/99 | 926 | 40.0 | 4/24/99 | 926 | 1.379 |
| 29 | 9.00 | 22.5 | 4/24/99 | 924 | 29.0 | 4/24/99 | 924 | 1.289 |
| 30 | 9.50 | 21.0 | 4/24/99 | 920 | 30.0 | 4/24/99 | 920 | 1.429 |
| 31 | 10.00 | 24.5 | 4/24/99 | 918 | 32.0 | 4/24/99 | 918 | 1.306 |
| 32 | 11.00 | 22.5 | 4/24/99 | 916 | 28.5 | 4/24/99 | 916 | 1.267 |
| 33 | 12.00 | 20.5 | 4/24/99 | 914 | 27.5 | 4/24/99 | 914 | 1.341 |
| 34 | 12.50 | 19.0 | 4/24/99 | 912 | 27.0 | 4/24/99 | 912 | 1.421 |
| 35 | 14.50 | 20.0 | 4/24/99 | 907 | 28.0 | 4/24/99 | 907 | 1.400 |
| 36 | 15.00 | 18.5 | 4/24/99 | 905 | 26.0 | 4/24/99 | 905 | 1.405 |
| 37 | 16.00 | 16.7 | 4/24/99 | 902 | 24.0 | 4/24/99 | 902 | 1.437 |
| 38 | 17.00 | 14.70 | 4/24/99 | 900 | 22.0 | 4/24/99 | 900 | 1.497 |
| 39 | 18.00 | 15.00 | 4/24/99 | 857 | 21.0 | 4/24/99 | 857 | 1.400 |
| 40 | 19.00 | 14.70 | 4/24/99 | 854 | 19.7 | 4/24/99 | 854 | 1.340 |
| 41 | 20.00 | 13.00 | 4/24/99 | 851 | 17.5 | 4/24/99 | 851 | 1.346 |
| 42 | 21.00 | 12.50 | 4/24/99 | 848 | 16.5 | 4/24/99 | 848 | 1.320 |
| 43 | 22.00 | 12.40 | 4/24/99 | 845 | 18.0 | 4/24/99 | 845 | 1.452 |
| 44 | 23.00 | 11.80 | 4/24/99 | 837 | 16.5 | 4/24/99 | 837 | 1.398 |
| 45 | 24.00 | 11.50 | 4/22/99 | 940 | 16.5 | 4/22/99 | 940 | 1.435 |
| 46 | 24.10 | 11.00 | 4/22/99 | 950 | 16.2 | 4/22/99 | 950 | 1.473 |
| 47 | 25.40 | 11.50 | 4/22/99 | 1057 | 16.5 | 4/22/99 | 1057 | 1.435 |

Average Ratio = 1.329

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 Khz

5.0/1.0 Kw

DA-2

Radial 245 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.36 | 1000.0 | 4/23/99 | 1302 | | | | |
| 2 | 0.42 | 780.0 | 4/23/99 | 1300 | | | | |
| 3 | 0.54 | 620.0 | 4/23/99 | 1259 | | | | |
| 4 | 0.62 | 500.0 | 4/23/99 | 1258 | | | | |
| 5 | 0.72 | 440.0 | 4/23/99 | 1257 | | | | |
| 6 | 0.80 | 335.0 | 4/23/99 | 1256 | | | | |
| 7 | 0.92 | 310.0 | 4/23/99 | 1253 | | | | |
| 8 | 0.99 | 330.0 | 4/23/99 | 1252 | | | | |
| 9 | 1.12 | 290.0 | 4/23/99 | 1249 | | | | |
| 10 | 1.21 | 250.0 | 4/23/99 | 1248 | | | | |
| 11 | 1.33 | 225.0 | 4/23/99 | 1247 | | | | |
| 12 | 1.44 | 200.0 | 4/23/99 | 1246 | | | | |
| 13 | 1.63 | 185.0 | 4/23/99 | 1245 | 460.0 | 4/23/99 | 1245 | 2.486 |
| 14 | 1.81 | 155.0 | 4/23/99 | 1243 | 440.0 | 4/23/99 | 1243 | 2.839 |
| 15 | 2.02 | 155.0 | 4/23/99 | 1242 | 450.0 | 4/23/99 | 1242 | 2.903 |
| 16 | 2.20 | 165.0 | 4/23/99 | 1241 | 470.0 | 4/23/99 | 1241 | 2.848 |
| 17 | 2.42 | 120.0 | 4/23/99 | 1240 | 370.0 | 4/23/99 | 1240 | 3.083 |
| 18 | 2.81 | 110.0 | 4/23/99 | 1239 | 310.0 | 4/23/99 | 1239 | 2.818 |
| 19 | 3.02 | 120.0 | 4/23/99 | 1238 | 320.0 | 4/23/99 | 1238 | 2.667 |
| 20 | 3.21 | 120.0 | 4/23/99 | 1237 | 310.0 | 4/23/99 | 1237 | 2.583 |
| 21 | 3.42 | 72.0 | 4/23/99 | 1235 | 340.0 | 4/23/99 | 1235 | 4.722 |
| 22 | 3.59 | 115.0 | 4/23/99 | 1234 | 310.0 | 4/23/99 | 1234 | 2.696 |
| 23 | 3.89 | 78.0 | 4/23/99 | 1214 | 200.0 | 4/23/99 | 1214 | 2.564 |
| 24 | 4.12 | 55.0 | 4/23/99 | 1212 | 145.0 | 4/23/99 | 1212 | 2.636 |
| 25 | 4.53 | 84.0 | 4/20/99 | 1330 | 212.0 | 4/20/99 | 1330 | 2.524 |
| 26 | 4.90 | 86.0 | 4/20/99 | 1527 | 240.0 | 4/20/99 | 1527 | 2.791 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 Khz

5.0/1.0 Kw

DA-2

Radial 245 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 27 | 6.02 | 56.0 | 4/20/99 | 1507 | 155.0 | 4/20/99 | 1507 | 2.768 |
| 28 | 6.36 | 58.0 | 4/20/99 | 1503 | 155.0 | 4/20/99 | 1503 | 2.672 |
| 29 | 6.69 | 54.0 | 4/20/99 | 1459 | 150.0 | 4/20/99 | 1459 | 2.778 |
| 30 | 7.04 | 52.0 | 4/20/99 | 1447 | 145.0 | 4/20/99 | 1447 | 2.788 |
| 31 | 7.14 | 45.5 | 4/20/99 | 1453 | 125.0 | 4/20/99 | 1453 | 2.747 |
| 32 | 10.2 | 29.0 | 4/20/99 | 1435 | 86.0 | 4/20/99 | 1435 | 2.966 |
| 33 | 10.5 | 25.0 | 4/20/99 | 1430 | 76.0 | 4/20/99 | 1430 | 3.040 |
| 34 | 11.5 | 17.9 | 4/20/99 | 1420 | 55.0 | 4/20/99 | 1420 | 3.073 |
| 35 | 12.1 | 18.1 | 4/20/99 | 1407 | 55.0 | 4/20/99 | 1407 | 3.039 |
| 36 | 13.2 | 15.5 | 4/20/99 | 1355 | 45.0 | 4/20/99 | 1355 | 2.903 |
| 37 | 14.1 | 13.1 | 4/20/99 | 1345 | 38.0 | 4/20/99 | 1345 | 2.901 |
| 38 | 15.3 | 14.0 | 4/20/99 | 1336 | 41.0 | 4/20/99 | 1336 | 2.929 |
| 39 | 23.9 | 9.8 | 4/20/99 | 1309 | 22.8 | 4/20/99 | 1309 | 2.327 |
| 40 | 24.7 | 9.0 | 4/20/99 | 1304 | 25.8 | 4/20/99 | 1304 | 2.867 |
| 41 | 25.4 | 9.2 | 4/20/99 | 1256 | 27.0 | 4/20/99 | 1256 | 2.935 |
| 42 | 26.3 | 10.0 | 4/20/99 | 1250 | 29.0 | 4/20/99 | 1250 | 2.900 |
| 43 | 27.2 | 8.3 | 4/20/99 | 1243 | 23.8 | 4/20/99 | 1243 | 2.867 |
| 44 | 28.1 | 7.6 | 4/20/99 | 1238 | 22.0 | 4/20/99 | 1238 | 2.895 |
| 45 | 29.4 | 6.2 | 4/20/99 | 1230 | 13.5 | 4/20/99 | 1230 | 2.177 |
| 46 | 30.8 | 4.5 | 4/20/99 | 1222 | 12.9 | 4/20/99 | 1222 | 2.867 |

Average Ratio= 2.841

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 295 Degrees

| Point No. | Dist. Km | 1.25 Kw-ND | | | 5.4 Kw-DA | | | Ratio DA/ND |
|--------------|-------------|------------|---------|------|-----------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.46 | 800.0 | 4/24/99 | 1420 | | | | |
| 2 | 0.67 | 530.0 | 4/20/99 | 1743 | | | | |
| 3 | 0.74 | 470.0 | 4/20/99 | 1657 | | | | |
| 4 | 0.82 | 290.0 | 4/20/99 | 1700 | | | | |
| 5 | 0.87 | 290.0 | 4/20/99 | 1702 | | | | |
| 6 | 0.91 | 410.0 | 4/20/99 | 1708 | | | | |
| 7 | 1.05 | 310.0 | 4/20/99 | 1745 | | | | |
| 8 | 1.08 | 285.0 | 4/20/99 | 1725 | | | | |
| 9 | 1.20 | 285.0 | 4/20/99 | 1716 | | | | |
| 10 | 1.50 | 230.0 | 4/20/99 | 1718 | | | | |
| 11 | 1.68 | 180.0 | 4/20/99 | 1728 | 520.0 | 4/20/99 | 1728 | 2.889 |
| 12 | 1.82 | 175.0 | 4/20/99 | 1730 | 520.0 | 4/20/99 | 1730 | 2.971 |
| 13 | 1.95 | 130.0 | 4/20/99 | 1733 | 400.0 | 4/20/99 | 1733 | 3.077 |
| 14 | 2.20 | 105.0 | 4/20/99 | 1648 | 320.0 | 4/20/99 | 1648 | 3.048 |
| 15 | 2.35 | 102.0 | 4/20/99 | 1646 | 310.0 | 4/20/99 | 1646 | 3.039 |
| 16 | 2.49 | 105.0 | 4/20/99 | 1640 | 315.0 | 4/20/99 | 1640 | 3.000 |
| 17 | 2.81 | 97.0 | 4/20/99 | 1635 | 270.0 | 4/20/99 | 1635 | 2.784 |
| 18 | 3.11 | 73.0 | 4/20/99 | 1630 | 215.0 | 4/20/99 | 1630 | 2.945 |
| 19 | 3.21 | 72.0 | 4/20/99 | 1626 | 215.0 | 4/20/99 | 1626 | 2.986 |
| 20 | 3.62 | 90.0 | 4/20/99 | 1623 | 280.0 | 4/20/99 | 1623 | 3.111 |
| 21 | 3.66 | 71.0 | 4/20/99 | 1620 | 215.0 | 4/20/99 | 1620 | 3.028 |
| 22 | 4.08 | 76.0 | 4/20/99 | 1616 | 230.0 | 4/20/99 | 1616 | 3.026 |
| 23 | 4.25 | 54.0 | 4/20/99 | 1611 | 165.0 | 4/20/99 | 1611 | 3.056 |
| 24 | 4.61 | 45.0 | 4/20/99 | 1606 | 140.0 | 4/20/99 | 1606 | 3.111 |
| 25 | 4.76 | 49.0 | 4/20/99 | 1602 | 153.0 | 4/20/99 | 1602 | 3.122 |
| 26 | 5.01 | 52.0 | 4/20/99 | 1600 | 160.0 | 4/20/99 | 1600 | 3.077 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 295 Degrees

| Point No. | Dist. Km | 1.25 Kw-ND | | | 5.4 Kw-DA | | | Ratio DA/ND |
|--------------|-------------|------------|---------|------|-----------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 27 | 5.19 | 41.5 | 4/20/99 | 1554 | 130.0 | 4/20/99 | 1554 | 3.133 |
| 28 | 5.53 | 40.0 | 4/20/99 | 1549 | 125.0 | 4/20/99 | 1549 | 3.125 |
| 29 | 5.94 | 42.0 | 4/20/99 | 1548 | 135.0 | 4/20/99 | 1548 | 3.214 |
| 30 | 6.53 | 30.0 | 4/20/99 | 1545 | 102.0 | 4/20/99 | 1545 | 3.400 |
| 31 | 6.88 | 26.0 | 4/20/99 | 1542 | 90.0 | 4/20/99 | 1542 | 3.462 |
| 32 | 7.42 | 21.5 | 4/20/99 | 1438 | 75.0 | 4/20/99 | 1438 | 3.488 |
| 33 | 7.60 | 23.0 | 4/20/99 | 1436 | 79.0 | 4/20/99 | 1436 | 3.435 |
| 34 | 8.02 | 19.5 | 4/20/99 | 1433 | 65.0 | 4/20/99 | 1433 | 3.333 |
| 35 | 9.03 | 14.7 | 4/20/99 | 1428 | 45.0 | 4/20/99 | 1428 | 3.061 |
| 36 | 9.55 | 15.3 | 4/20/99 | 1423 | 48.0 | 4/20/99 | 1423 | 3.137 |
| 37 | 10.7 | 9.3 | 4/20/99 | 1415 | 27.0 | 4/20/99 | 1415 | 2.903 |
| 38 | 12.0 | 7.0 | 4/20/99 | 1357 | 21.5 | 4/20/99 | 1357 | 3.071 |
| 39 | 12.9 | 7.5 | 4/20/99 | 1352 | 22.5 | 4/20/99 | 1352 | 3.000 |
| 40 | 13.5 | 4.4 | 4/20/99 | 1344 | 14.0 | 4/20/99 | 1344 | 3.182 |
| 41 | 14.2 | 5.4 | 4/20/99 | 1339 | 16.5 | 4/20/99 | 1339 | 3.056 |
| 42 | 14.8 | 5.80 | 4/20/99 | 1334 | 18.0 | 4/20/99 | 1334 | 3.103 |
| 43 | 15.7 | 6.40 | 4/20/99 | 1327 | 19.5 | 4/20/99 | 1327 | 3.047 |
| 44 | 17.3 | 4.40 | 4/20/99 | 1315 | 14.0 | 4/20/99 | 1315 | 3.182 |
| 45 | 18.1 | 3.70 | 4/20/99 | 1306 | 11.5 | 4/20/99 | 1306 | 3.108 |
| 46 | 18.7 | 3.20 | 4/20/99 | 1303 | 10.5 | 4/20/99 | 1303 | 3.281 |
| 47 | 19.5 | 2.90 | 4/20/99 | 1256 | 10.0 | 4/20/99 | 1256 | 3.448 |
| 48 | 20.4 | 3.30 | 4/20/99 | 1253 | 11.0 | 4/20/99 | 1253 | 3.333 |
| 49 | 20.8 | 2.80 | 4/20/99 | 1250 | 9.9 | 4/20/99 | 1250 | 3.536 |
| 50 | 22.3 | 2.00 | 4/20/99 | 1244 | 6.8 | 4/20/99 | 1244 | 3.400 |
| 51 | 25.2 | 1.20 | 4/20/99 | 1238 | 4.1 | 4/20/99 | 1238 | 3.417 |
| 52 | 25.8 | 1.15 | 4/20/99 | 1225 | 4.0 | 4/20/99 | 1225 | 3.478 |
| 53 | 27.5 | 1.0 | 4/20/99 | 1214 | 3.3 | 4/20/99 | 1214 | 3.300 |

Average Ratio= 3.161

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

DA-2

Radial 345 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 1 | 0.42 | 800.0 | 4/22/99 | 1546 | | | | |
| 2 | 0.60 | 450.0 | 4/22/99 | 1547 | | | | |
| 3 | 0.68 | 460.0 | 4/22/99 | 1548 | | | | |
| 4 | 0.96 | 380.0 | 4/22/99 | 1552 | | | | |
| 5 | 1.46 | 200.0 | 4/22/99 | 1433 | 600.0 | 4/22/99 | 1433 | 3.000 |
| 6 | 1.56 | 190.0 | 4/22/99 | 1431 | 530.0 | 4/22/99 | 1431 | 2.789 |
| 7 | 1.86 | 175.0 | 4/22/99 | 1422 | 500.0 | 4/22/99 | 1422 | 2.857 |
| 8 | 2.00 | 138.0 | 4/22/99 | 1424 | 400.0 | 4/22/99 | 1424 | 2.899 |
| 9 | 2.36 | 117.0 | 4/22/99 | 1418 | 325.0 | 4/22/99 | 1418 | 2.778 |
| 10 | 2.58 | 110.0 | 4/22/99 | 1415 | 300.0 | 4/22/99 | 1415 | 2.727 |
| 11 | 2.82 | 98.0 | 4/22/99 | 1411 | 260.0 | 4/22/99 | 1411 | 2.653 |
| 12 | 2.99 | 82.0 | 4/22/99 | 1410 | 200.0 | 4/22/99 | 1410 | 2.439 |
| 13 | 3.33 | 91.0 | 4/22/99 | 1406 | 235.0 | 4/22/99 | 1406 | 2.582 |
| 14 | 3.49 | 87.0 | 4/22/99 | 1403 | 225.0 | 4/22/99 | 1403 | 2.586 |
| 15 | 3.71 | 78.0 | 4/22/99 | 1400 | 210.0 | 4/22/99 | 1400 | 2.692 |
| 16 | 3.93 | 61.0 | 4/22/99 | 1357 | 168.0 | 4/22/99 | 1357 | 2.754 |
| 17 | 4.12 | 64.0 | 4/22/99 | 1354 | 175.0 | 4/22/99 | 1354 | 2.734 |
| 18 | 4.36 | 64.0 | 4/22/99 | 1351 | 175.0 | 4/22/99 | 1351 | 2.734 |
| 19 | 4.72 | 48.0 | 4/22/99 | 1347 | 135.0 | 4/22/99 | 1347 | 2.813 |
| 20 | 4.92 | 44.0 | 4/22/99 | 1345 | 120.0 | 4/22/99 | 1345 | 2.727 |
| 21 | 5.44 | 34.0 | 4/22/99 | 1339 | 91.0 | 4/22/99 | 1339 | 2.676 |
| 22 | 5.74 | 35.0 | 4/22/99 | 1330 | 100.0 | 4/22/99 | 1330 | 2.857 |
| 23 | 5.96 | 25.8 | 4/22/99 | 1321 | 75.0 | 4/22/99 | 1321 | 2.907 |
| 24 | 6.24 | 20.0 | 4/22/99 | 1318 | 62.0 | 4/22/99 | 1318 | 3.100 |
| 25 | 6.97 | 20.0 | 4/22/99 | 1314 | 58.0 | 4/22/99 | 1314 | 2.900 |
| 26 | 7.30 | 19.2 | 4/22/99 | 1313 | 54.0 | 4/22/99 | 1313 | 2.813 |

TABULATION OF FIELD STRENGTH MEASUREMENTS

RADIO STATION WQBN
TEMPLE TERRACE, FLORIDA

1300 KHz.

5.0/1.0 Kw

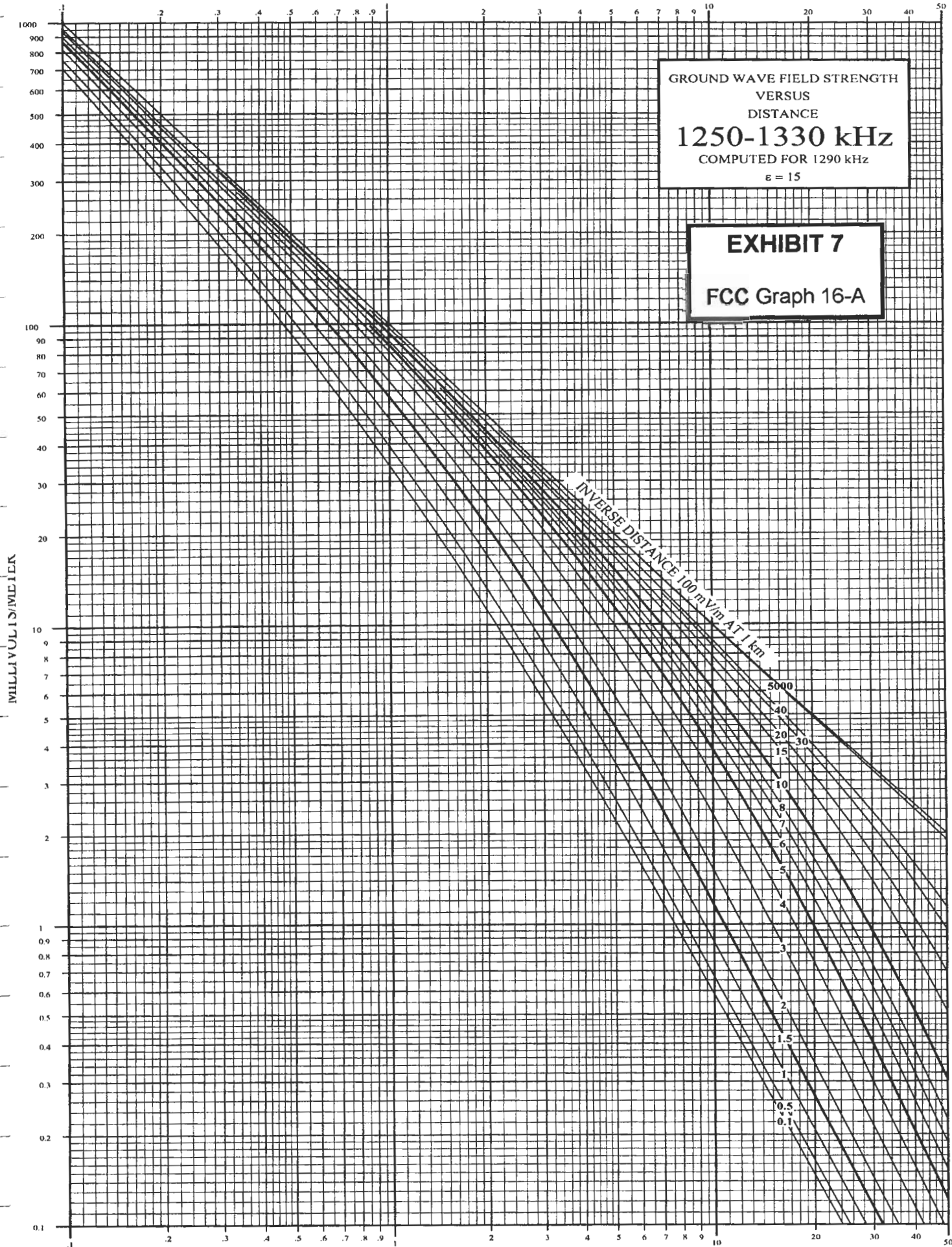
DA-2

Radial 345 Degrees

| Point No. | Dist. Km | <u>1.25 Kw-ND</u> | | | <u>5.4 Kw-DA</u> | | | Ratio DA/ND |
|--------------|-------------|-------------------|---------|------|------------------|---------|------|----------------|
| | | mV/m | Date | Time | mV/m | Date | Time | |
| 27 | 7.74 | 16.5 | 4/22/99 | 1309 | 48.0 | 4/22/99 | 1309 | 2.909 |
| 28 | 7.93 | 19.8 | 4/22/99 | 1304 | 55.0 | 4/22/99 | 1304 | 2.778 |
| 29 | 9.18 | 18.5 | 4/22/99 | 1258 | 50.0 | 4/22/99 | 1258 | 2.703 |
| 30 | 10.2 | 11.5 | 4/22/99 | 1250 | 28.0 | 4/22/99 | 1250 | 2.435 |
| 31 | 11.1 | 10.2 | 4/22/99 | 1244 | 27.5 | 4/22/99 | 1244 | 2.696 |
| 32 | 11.4 | 10.0 | 4/22/99 | 1240 | 26.5 | 4/22/99 | 1240 | 2.650 |
| 33 | 11.8 | 11.0 | 4/22/99 | 1237 | 31.0 | 4/22/99 | 1237 | 2.818 |
| 34 | 12.6 | 7.20 | 4/22/99 | 1229 | 19.0 | 4/22/99 | 1229 | 2.639 |
| 35 | 13.4 | 6.20 | 4/22/99 | 1224 | 15.8 | 4/22/99 | 1224 | 2.548 |
| 36 | 13.8 | 4.30 | 4/22/99 | 1215 | 11.5 | 4/22/99 | 1215 | 2.674 |
| 37 | 14.7 | 4.80 | 4/22/99 | 1210 | 13.0 | 4/22/99 | 1210 | 2.708 |
| 38 | 15.2 | 4.00 | 4/22/99 | 1204 | 11.5 | 4/22/99 | 1204 | 2.875 |
| 39 | 16.0 | 3.05 | 4/22/99 | 1130 | 9.00 | 4/22/99 | 1130 | 2.951 |
| 40 | 16.6 | 2.55 | 4/22/99 | 1126 | 7.40 | 4/22/99 | 1126 | 2.902 |
| 41 | 19.0 | 1.40 | 4/22/99 | 1118 | 4.20 | 4/22/99 | 1118 | 3.000 |
| 42 | 20.6 | 0.82 | 4/22/99 | 1113 | 2.35 | 4/22/99 | 1113 | 2.866 |
| 43 | 24.5 | 0.50 | 4/22/99 | 1106 | 1.45 | 4/22/99 | 1106 | 2.900 |
| 44 | 25.6 | 0.61 | 4/22/99 | 1103 | 1.80 | 4/22/99 | 1103 | 2.951 |
| 45 | 27.1 | 0.60 | 4/22/99 | 1056 | 1.80 | 4/22/99 | 1056 | 3.000 |
| 46 | 28.2 | 0.53 | 4/22/99 | 1048 | 1.60 | 4/22/99 | 1048 | 3.019 |
| 47 | 30.8 | 0.31 | 4/22/99 | 1030 | 1.00 | 4/22/99 | 1030 | 3.226 |
| 48 | 32.0 | 0.39 | 4/22/99 | 1025 | 1.20 | 4/22/99 | 1025 | 3.077 |

Average Ratio = 2.803

KILOMETERS FROM ANTENNA



KILOMETERS FROM ANTENNA

GRAPH 16-A

EXHIBIT 8A
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 32.0 E
POWER: 1.25kW NONDA
320 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 7.0 mS/m to 2.04 km**
- 2: 6.0 mS/m to 3.53 km**
- 3: 5.0 mS/m to 5.98 km**
- 4: 6.0 mS/m to 11.60 km**
- 5: 3.0 mS/m to 34.00 km**

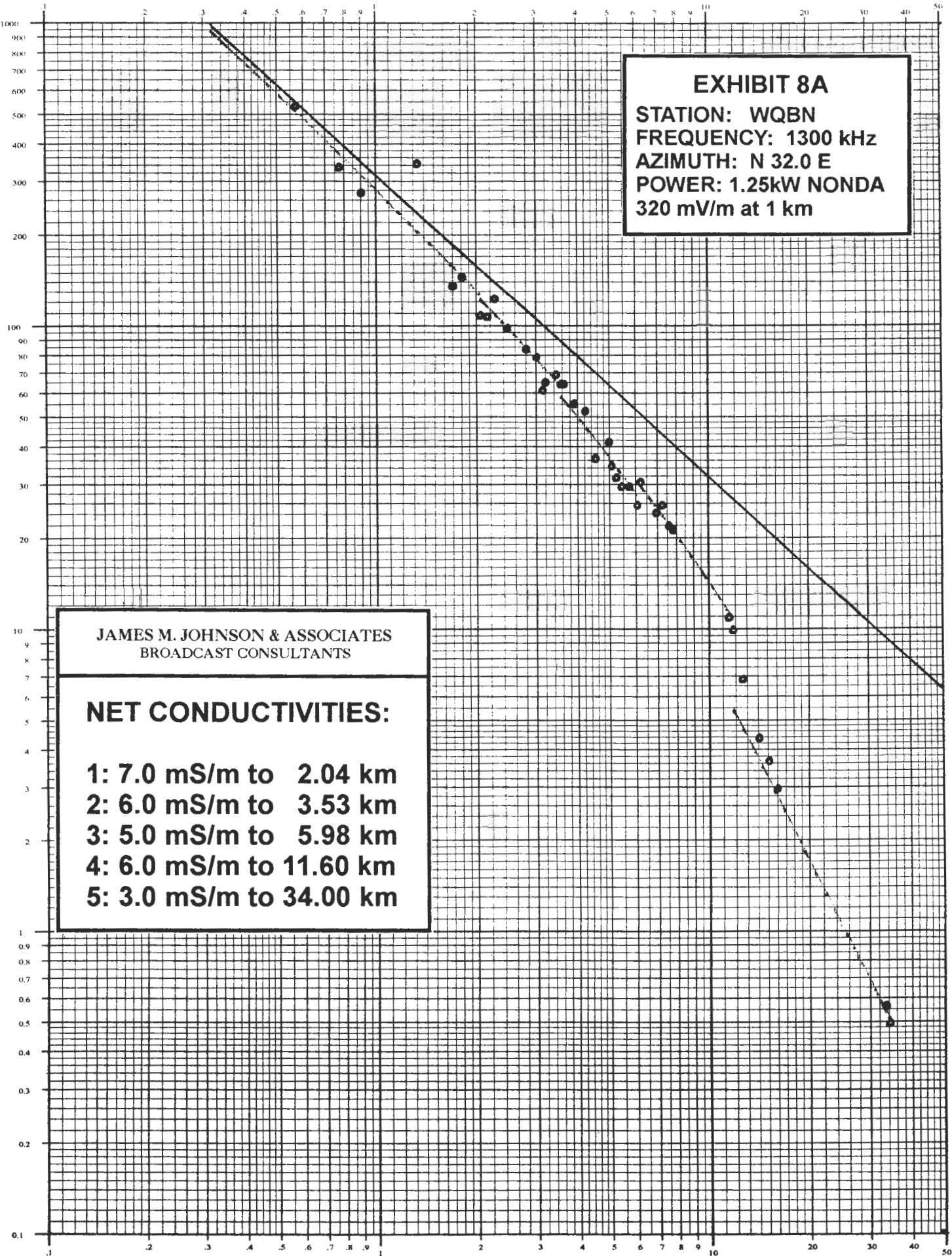


EXHIBIT 8B

**STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 32.0 E
POWER: 5.4 kW DA-D
293.4 mV/m at 1 km**

**JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS**

NET CONDUCTIVITIES:

- 1: 7.0 mS/m to 2.04 km**
- 2: 6.0 mS/m to 3.53 km**
- 3: 5.0 mS/m to 5.98 km**
- 4: 6.0 mS/m to 11.60 km**
- 5: 3.0 mS/m to 34.00 km**

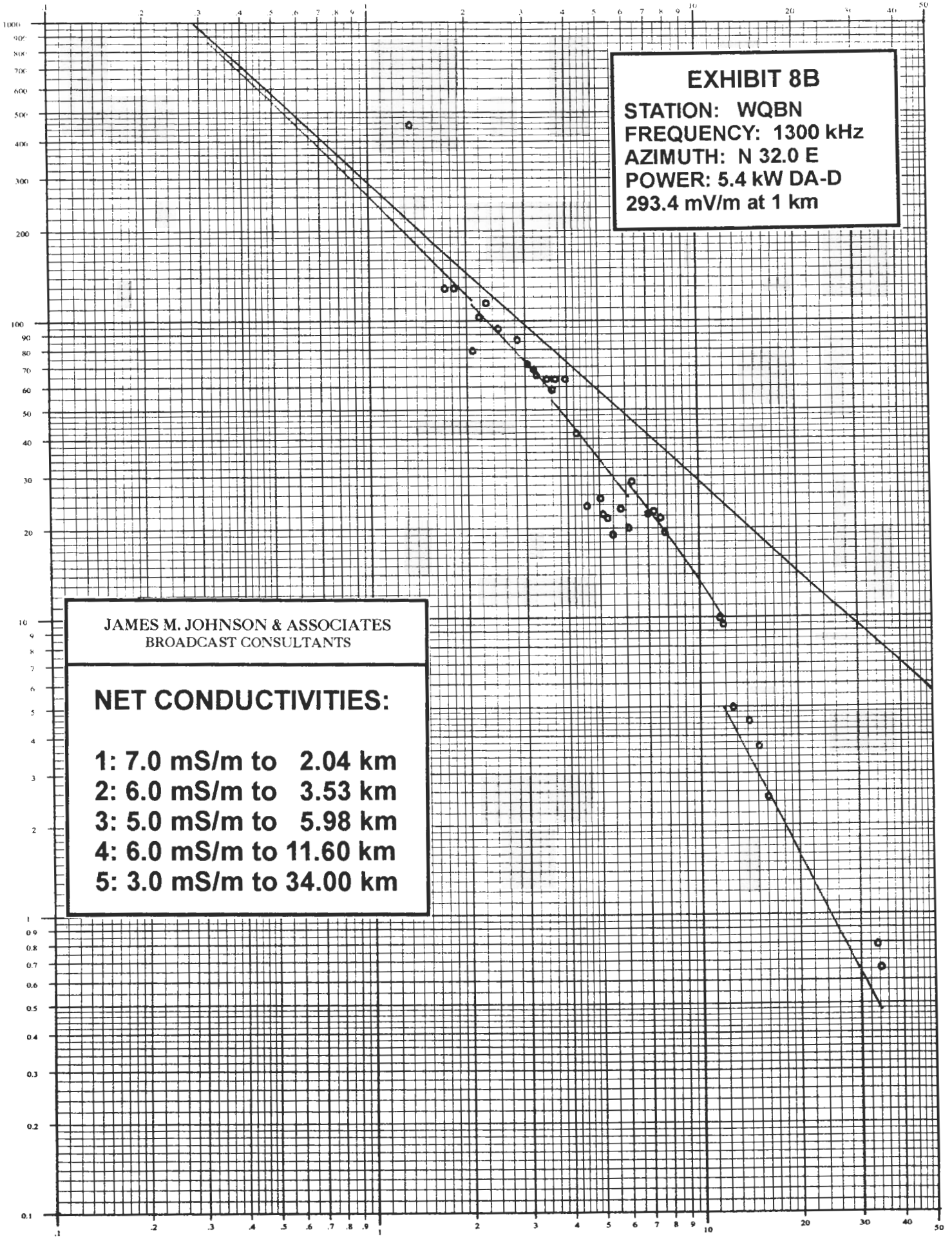


EXHIBIT 8C

STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 45.0 E
POWER: 1.25kW NONDA
320 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 15.0 mS/m to 2.87 km
- 2: 8.0 mS/m to 3.88 km
- 3: 6.0 mS/m to 5.05 km
- 4: 5.0 mS/m to 9.02 km
- 5: 3.0 mS/m to 35.20 km

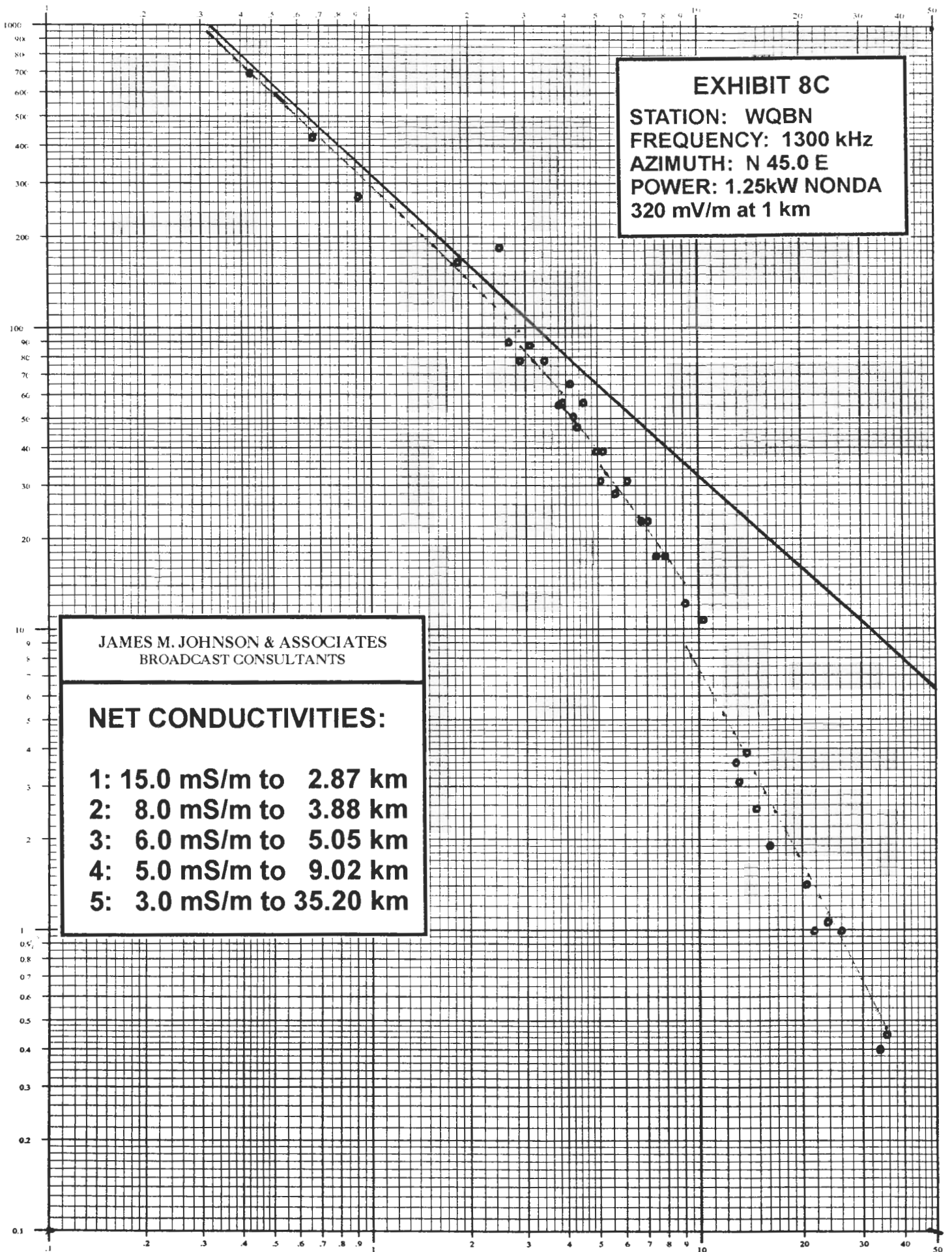


EXHIBIT 8D

**STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 45.0 E
POWER: 5.4 kW DA-D
230.4 mV/m at 1 km**

**JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS**

NET CONDUCTIVITIES:

- 1: 15.0 mS/m to 2.87 km**
- 2: 8.0 mS/m to 3.88 km**
- 3: 6.0 mS/m to 5.05 km**
- 4: 5.0 mS/m to 9.02 km**
- 5: 3.0 mS/m to 35.20 km**

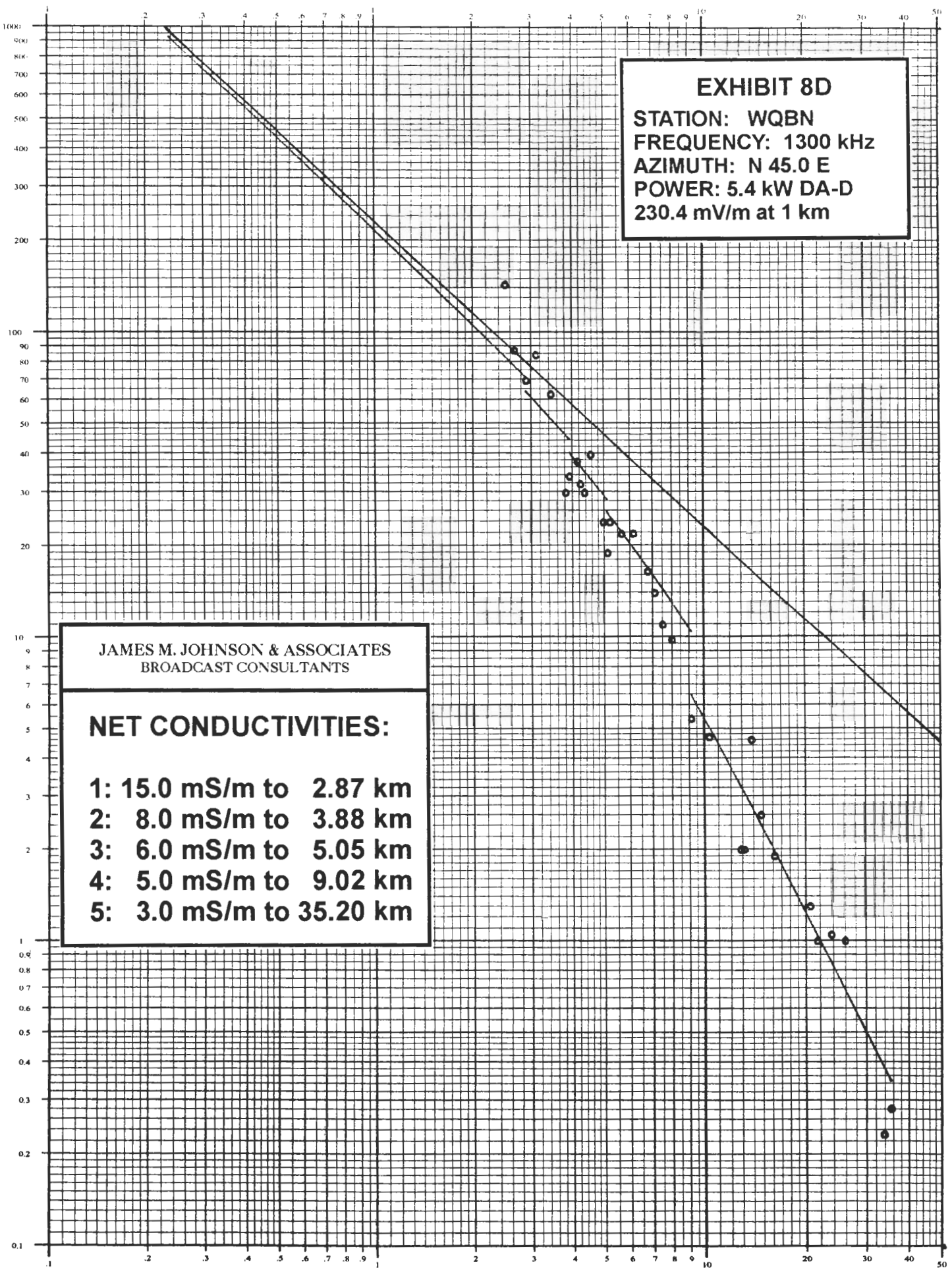


EXHIBIT 8E
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 115.0 E
POWER: 1.25kW NONDA
390 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

1: 4.0 mS/m to 1.13 km
2: 3.0 mS/m to 1.91 km
3: 4.0 mS/m to 3.50 km
4: 5.0 mS/m to 5.50 km
5: 4.0 mS/m to 16.90 km
6: 3.0 mS/m to 23.10 km
7: 2.0 mS/m to 27.20 km

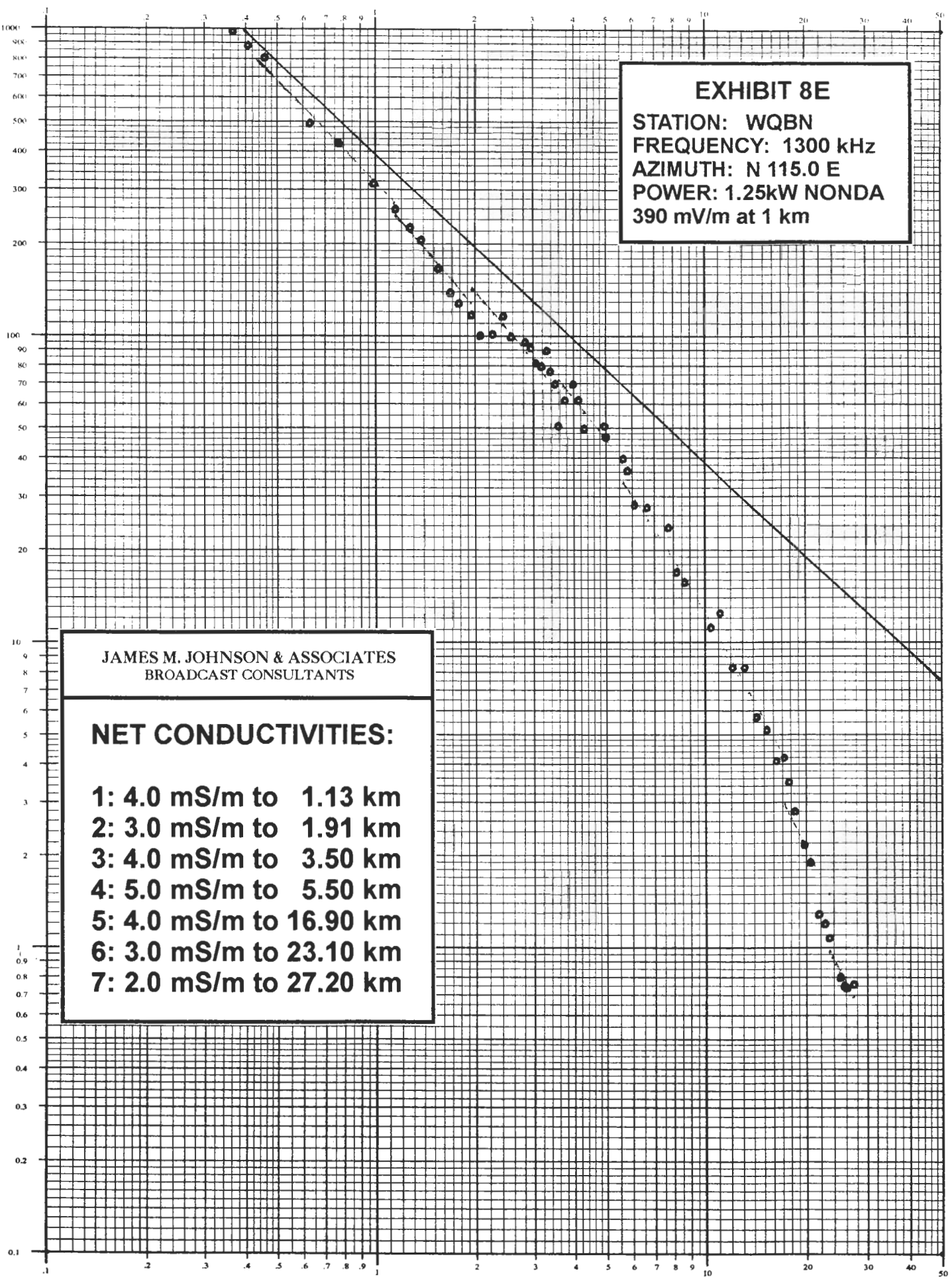


EXHIBIT 8F

**STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 115.0 E
POWER: 5.4 kW DA-D
88.5 mV/m at 1 km**

**JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS**

NET CONDUCTIVITIES:

- 1: 4.0 mS/m to 1.13 km**
- 2: 3.0 mS/m to 1.91 km**
- 3: 4.0 mS/m to 3.50 km**
- 4: 5.0 mS/m to 5.50 km**
- 5: 4.0 mS/m to 16.90 km**
- 6: 3.0 mS/m to 23.10 km**
- 7: 2.0 mS/m to 27.20 km**

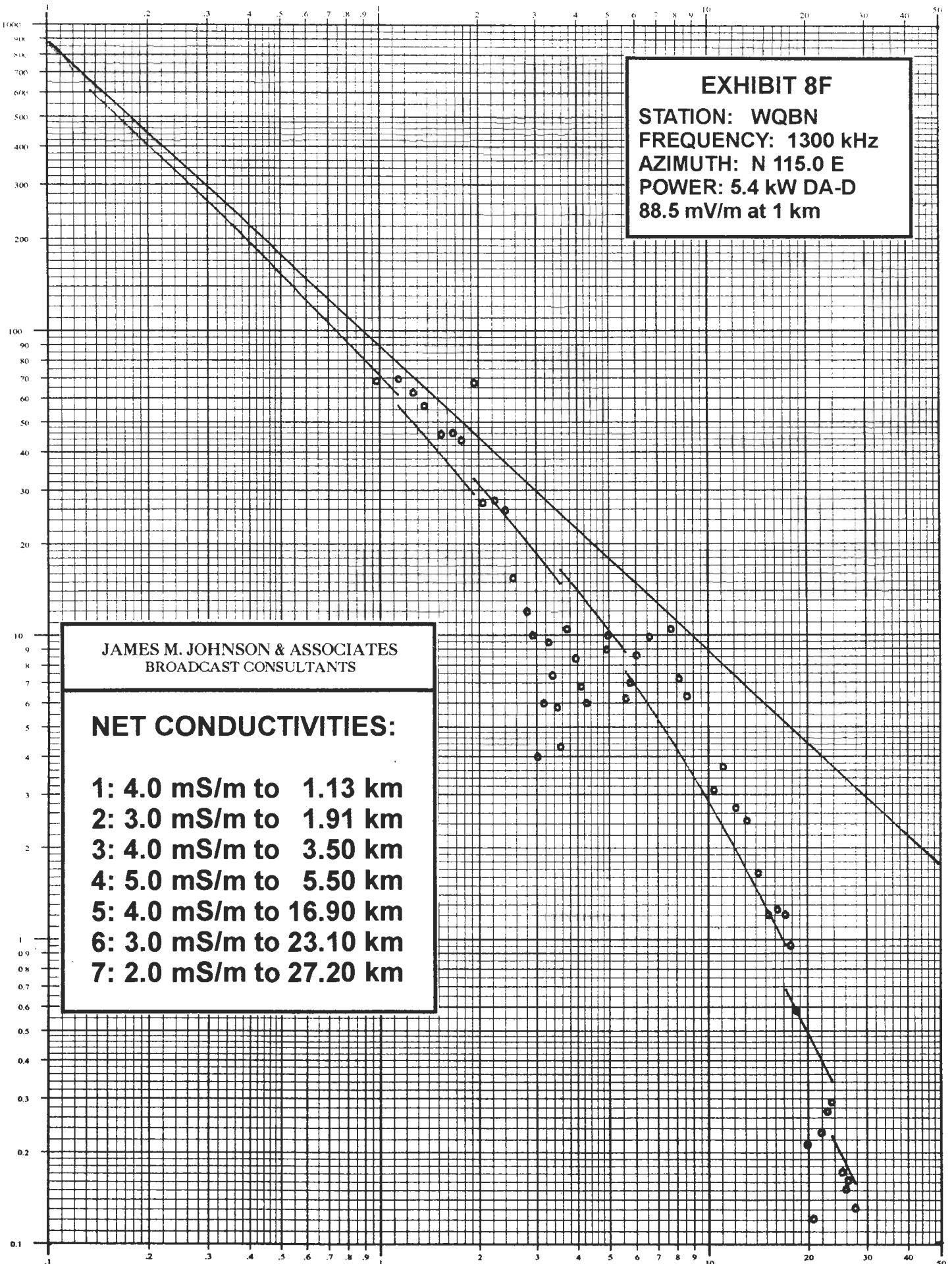


EXHIBIT 8G

STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 185.0 E
POWER: 1.25kW NONDA
310 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 6.0 mS/m to 2.55 km
- 2: 8.0 mS/m to 4.27 km
- 3: 15.0 mS/m to 12.00 km
- 4: 20.0 mS/m to 22.40 km
- 5: 15.0 mS/m to 28.20 km

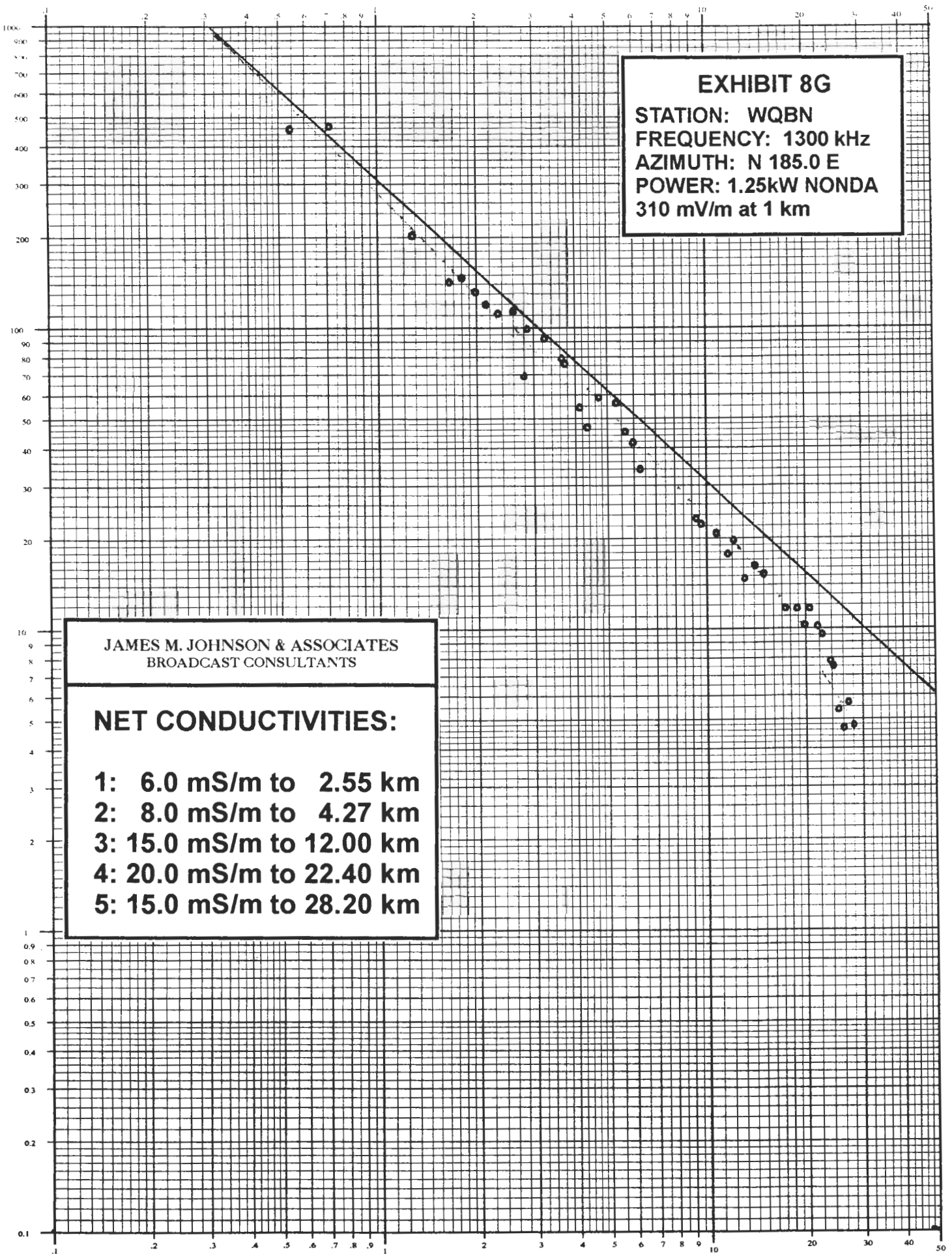


EXHIBIT 8H
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 185.0 E
POWER: 5.4 kW DA-D
328.9 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

1: 6.0 mS/m to 2.55 km
2: 8.0 mS/m to 4.27 km
3: 15.0 mS/m to 12.00 km
4: 20.0 mS/m to 22.40 km
5: 15.0 mS/m to 28.20 km

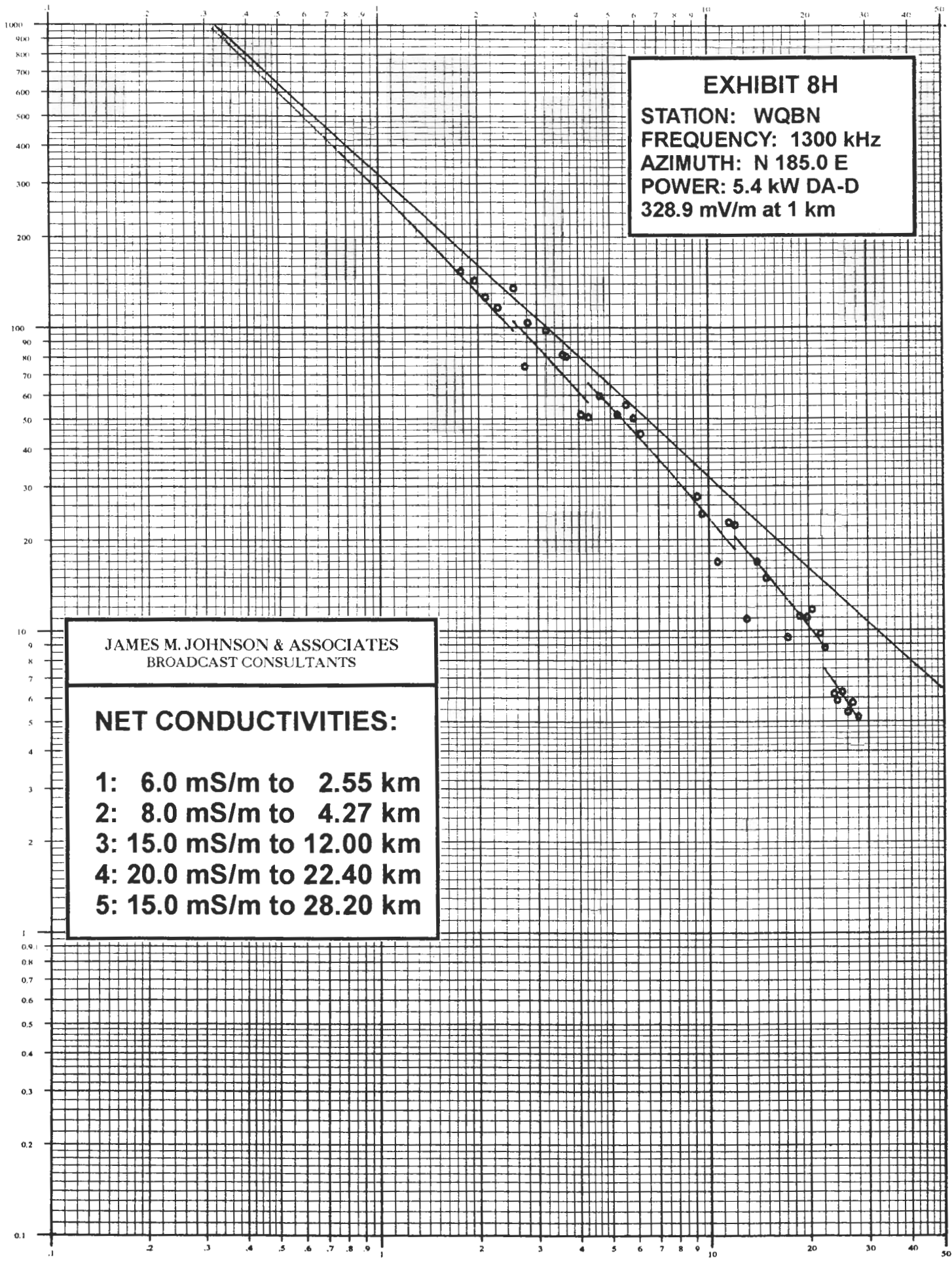
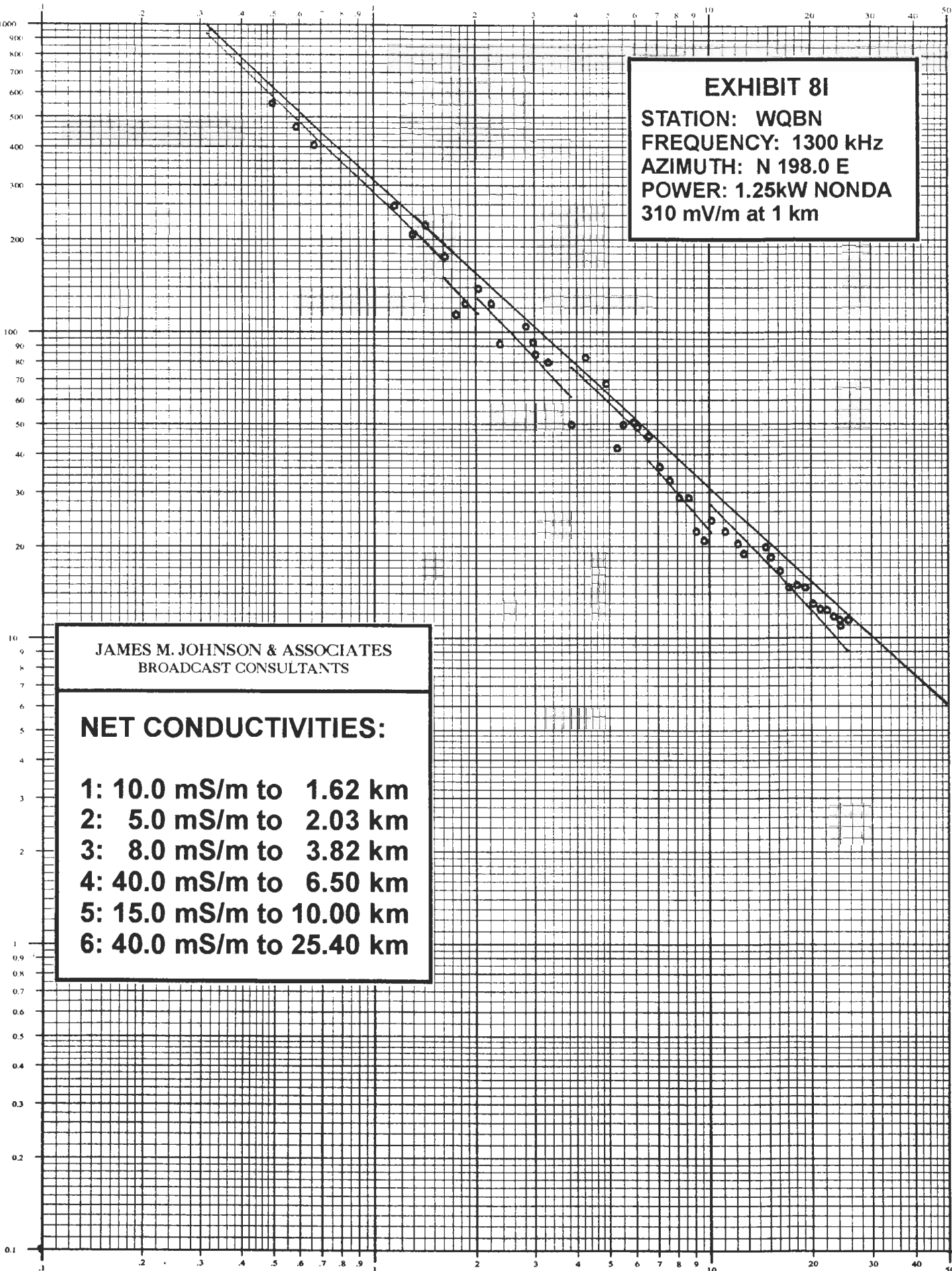


EXHIBIT 8I
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 198.0 E
POWER: 1.25kW NONDA
310 mV/m at 1 km



JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

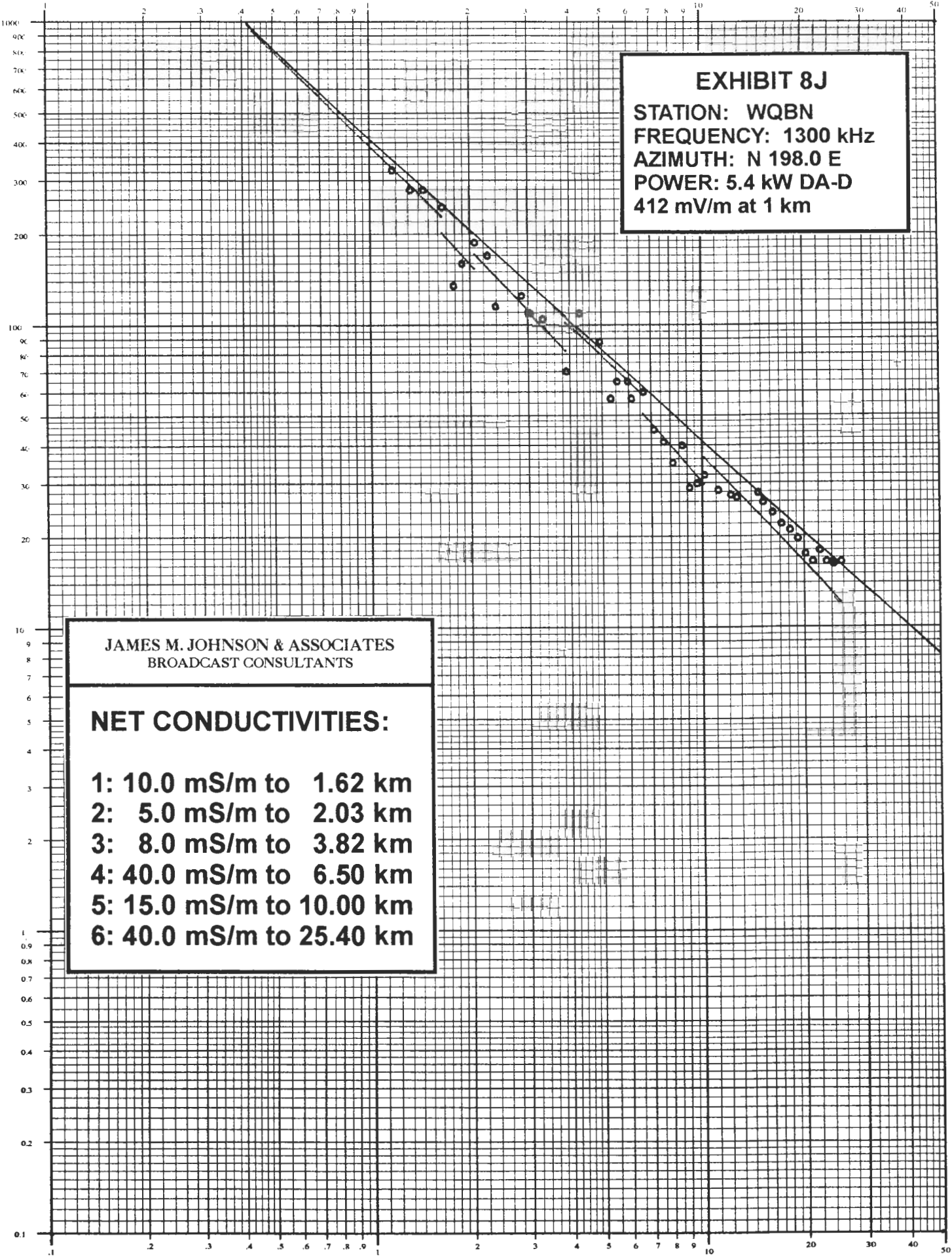
- 1: 10.0 mS/m to 1.62 km**
- 2: 5.0 mS/m to 2.03 km**
- 3: 8.0 mS/m to 3.82 km**
- 4: 40.0 mS/m to 6.50 km**
- 5: 15.0 mS/m to 10.00 km**
- 6: 40.0 mS/m to 25.40 km**

EXHIBIT 8J
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 198.0 E
POWER: 5.4 kW DA-D
412 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 10.0 mS/m to 1.62 km**
- 2: 5.0 mS/m to 2.03 km**
- 3: 8.0 mS/m to 3.82 km**
- 4: 40.0 mS/m to 6.50 km**
- 5: 15.0 mS/m to 10.00 km**
- 6: 40.0 mS/m to 25.40 km**



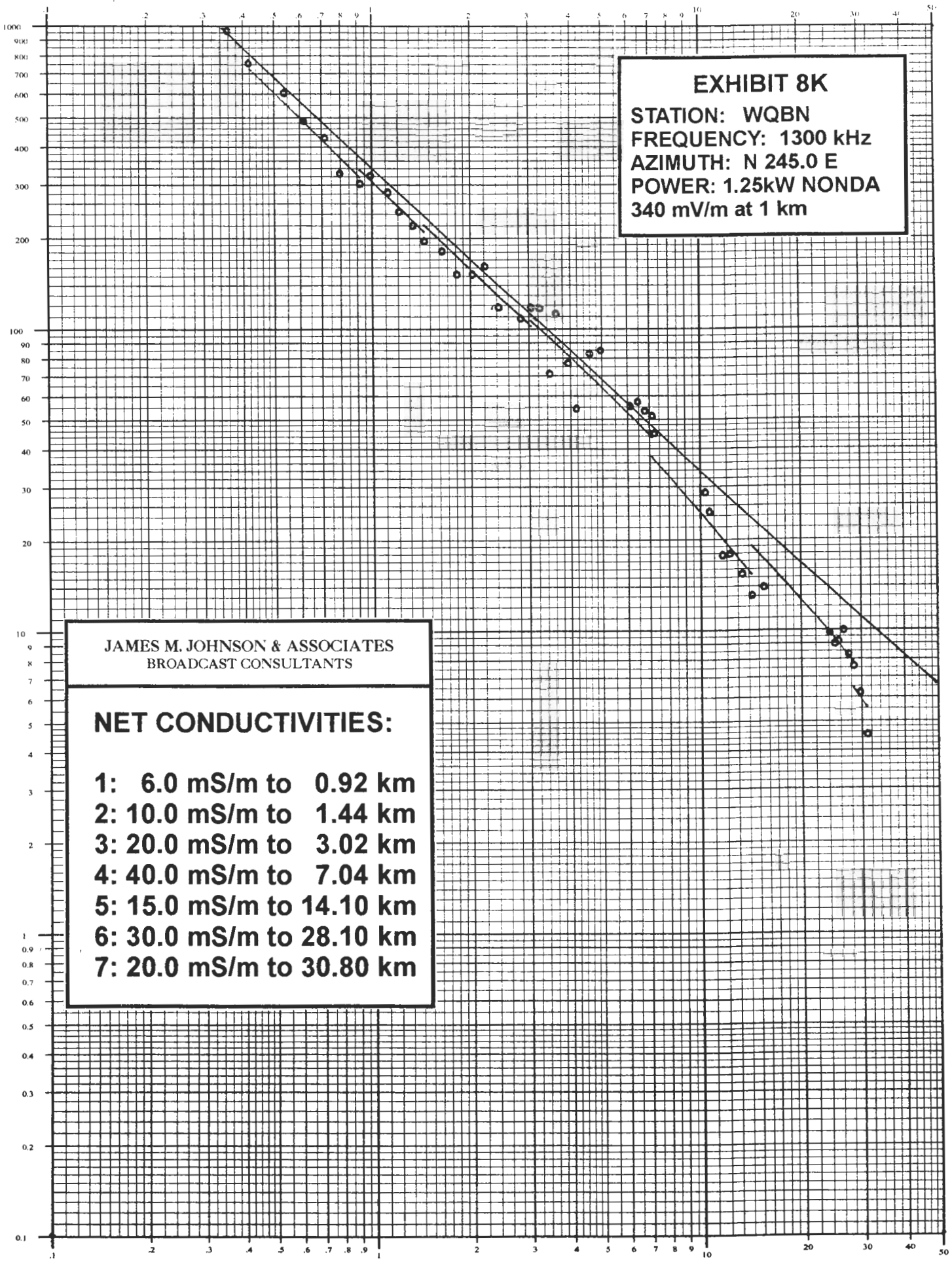


EXHIBIT 8K
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 245.0 E
POWER: 1.25kW NONDA
340 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

1: 6.0 mS/m to 0.92 km
2: 10.0 mS/m to 1.44 km
3: 20.0 mS/m to 3.02 km
4: 40.0 mS/m to 7.04 km
5: 15.0 mS/m to 14.10 km
6: 30.0 mS/m to 28.10 km
7: 20.0 mS/m to 30.80 km

EXHIBIT 8L
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 245.0 E
POWER: 5.4 kW DA-D
966 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 6.0 mS/m to 0.92 km**
- 2: 10.0 mS/m to 1.44 km**
- 3: 20.0 mS/m to 3.02 km**
- 4: 40.0 mS/m to 7.04 km**
- 5: 15.0 mS/m to 14.10 km**
- 6: 30.0 mS/m to 28.10 km**
- 7: 20.0 mS/m to 30.80 km**

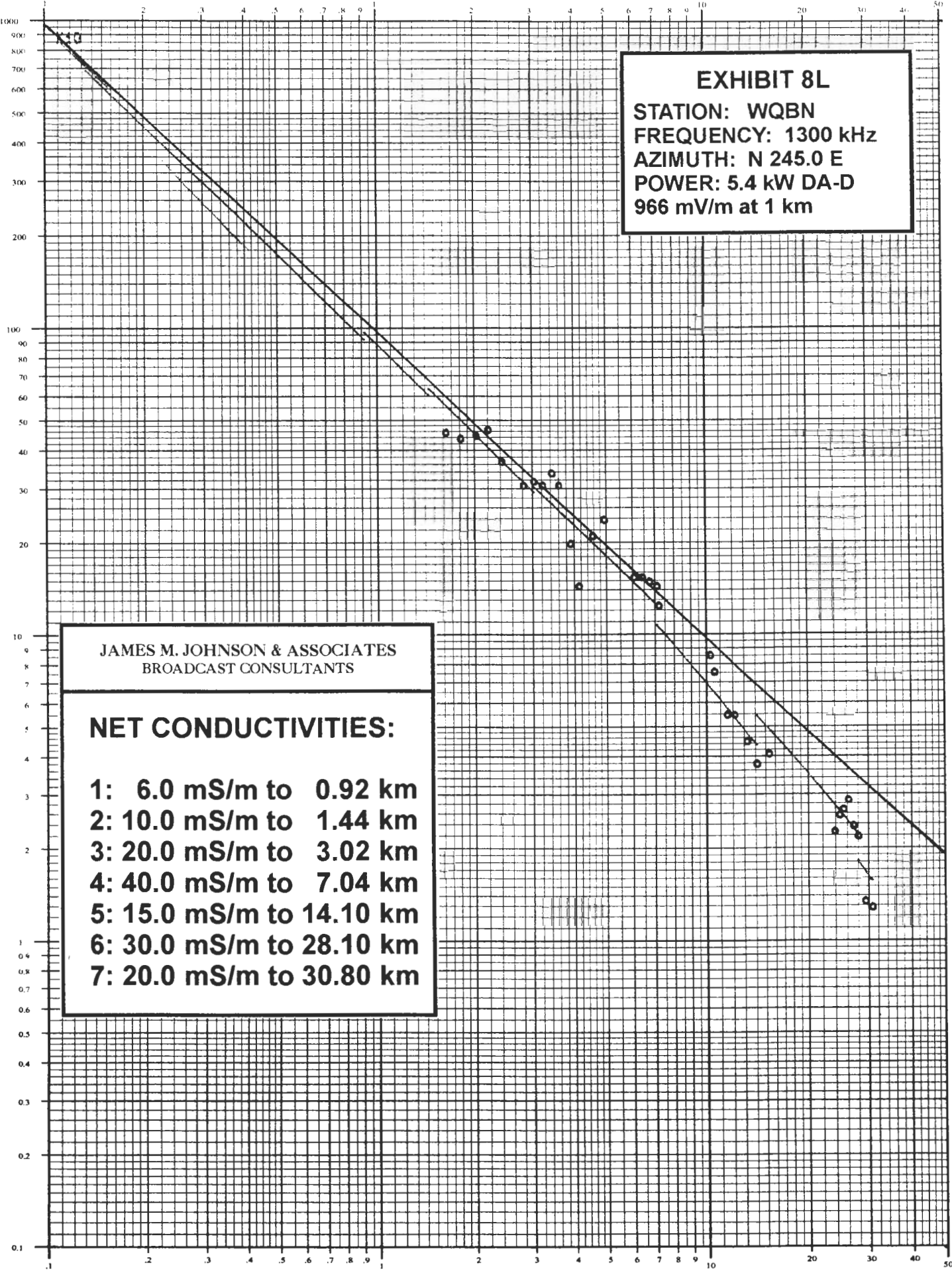
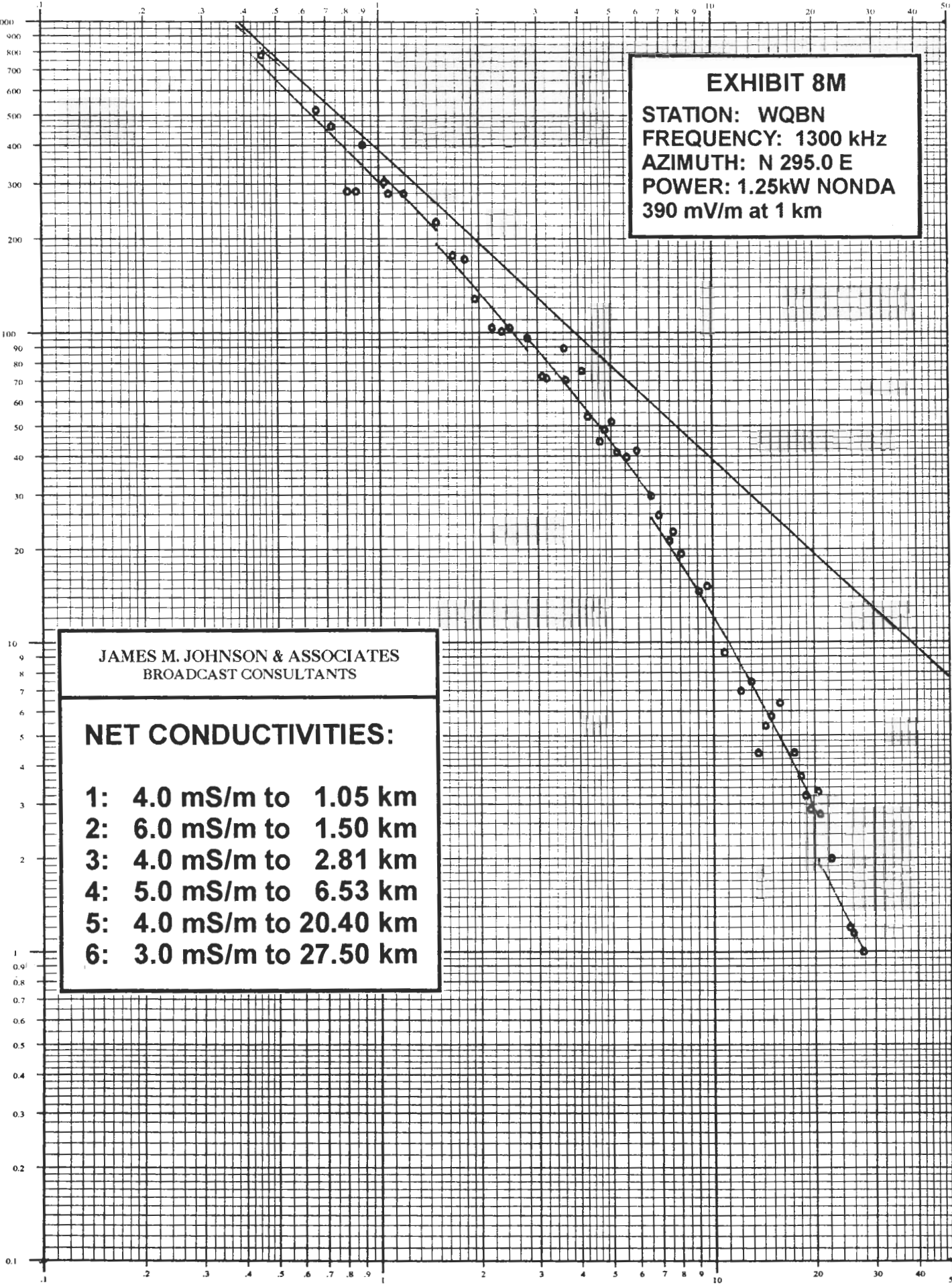


EXHIBIT 8M
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 295.0 E
POWER: 1.25kW NONDA
390 mV/m at 1 km



JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

| | | |
|-----------|--------------------|-----------------|
| 1: | 4.0 mS/m to | 1.05 km |
| 2: | 6.0 mS/m to | 1.50 km |
| 3: | 4.0 mS/m to | 2.81 km |
| 4: | 5.0 mS/m to | 6.53 km |
| 5: | 4.0 mS/m to | 20.40 km |
| 6: | 3.0 mS/m to | 27.50 km |

EXHIBIT 8N

**STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 295.0 E
POWER: 5.4 kW DA-D
1221 mV/m at 1 km**

**JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS**

NET CONDUCTIVITIES:

- 1: 4.0 mS/m to 1.05 km**
- 2: 6.0 mS/m to 1.50 km**
- 3: 4.0 mS/m to 2.81 km**
- 4: 5.0 mS/m to 6.53 km**
- 5: 4.0 mS/m to 20.40 km**
- 6: 3.0 mS/m to 27.50 km**

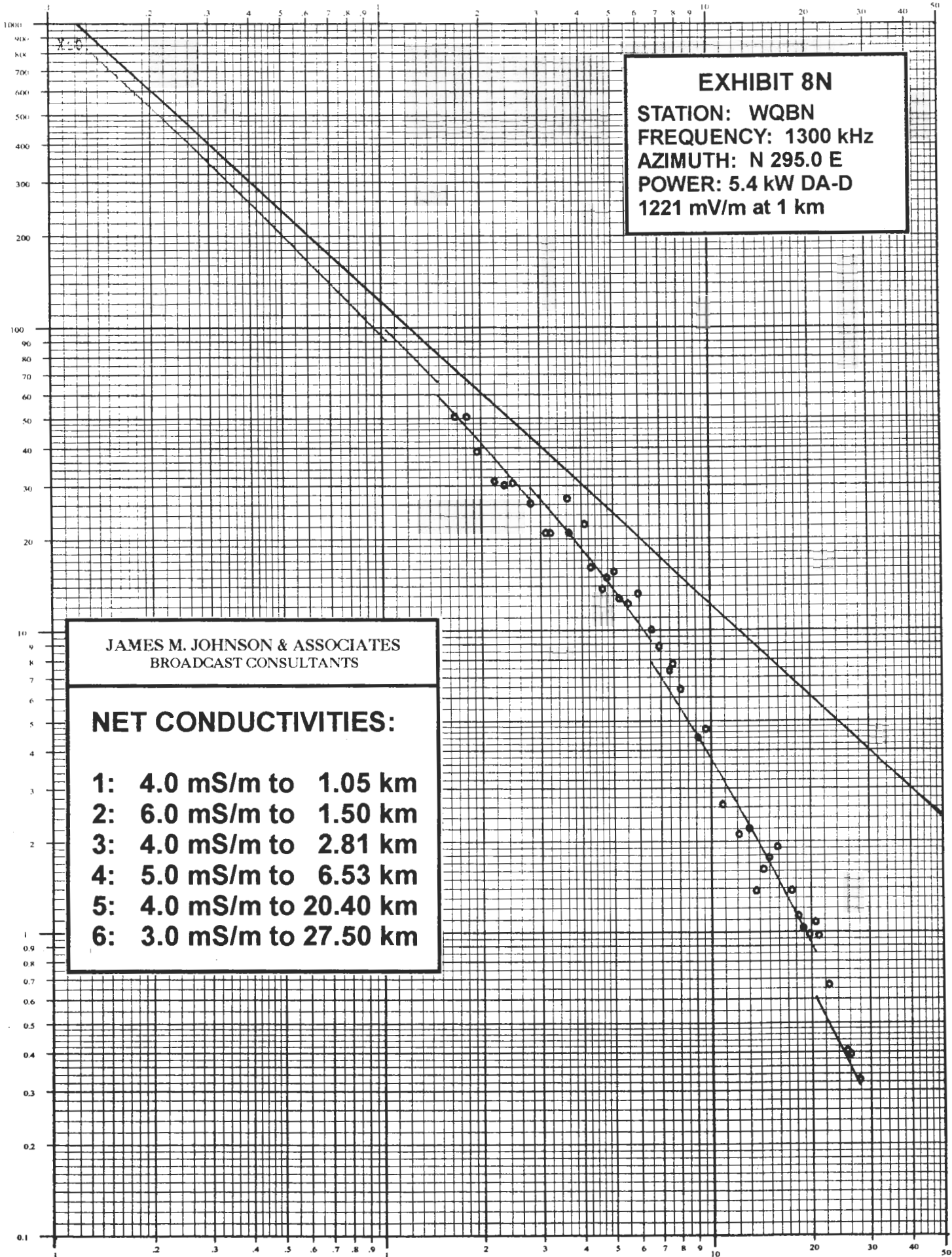


EXHIBIT 80

**STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 345.0 E
POWER: 1.25kW NONDA
340 mV/m at 1 km**

**JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS**

NET CONDUCTIVITIES:

- 1: 10.0 mS/m to 1.86 km**
- 2: 7.0 mS/m to 2.58 km**
- 3: 10.0 mS/m to 4.12 km**
- 4: 5.0 mS/m to 11.10 km**
- 5: 4.0 mS/m to 15.20 km**
- 6: 2.0 mS/m to 27.10 km**
- 7: 1.5 mS/m to 32.00 km**

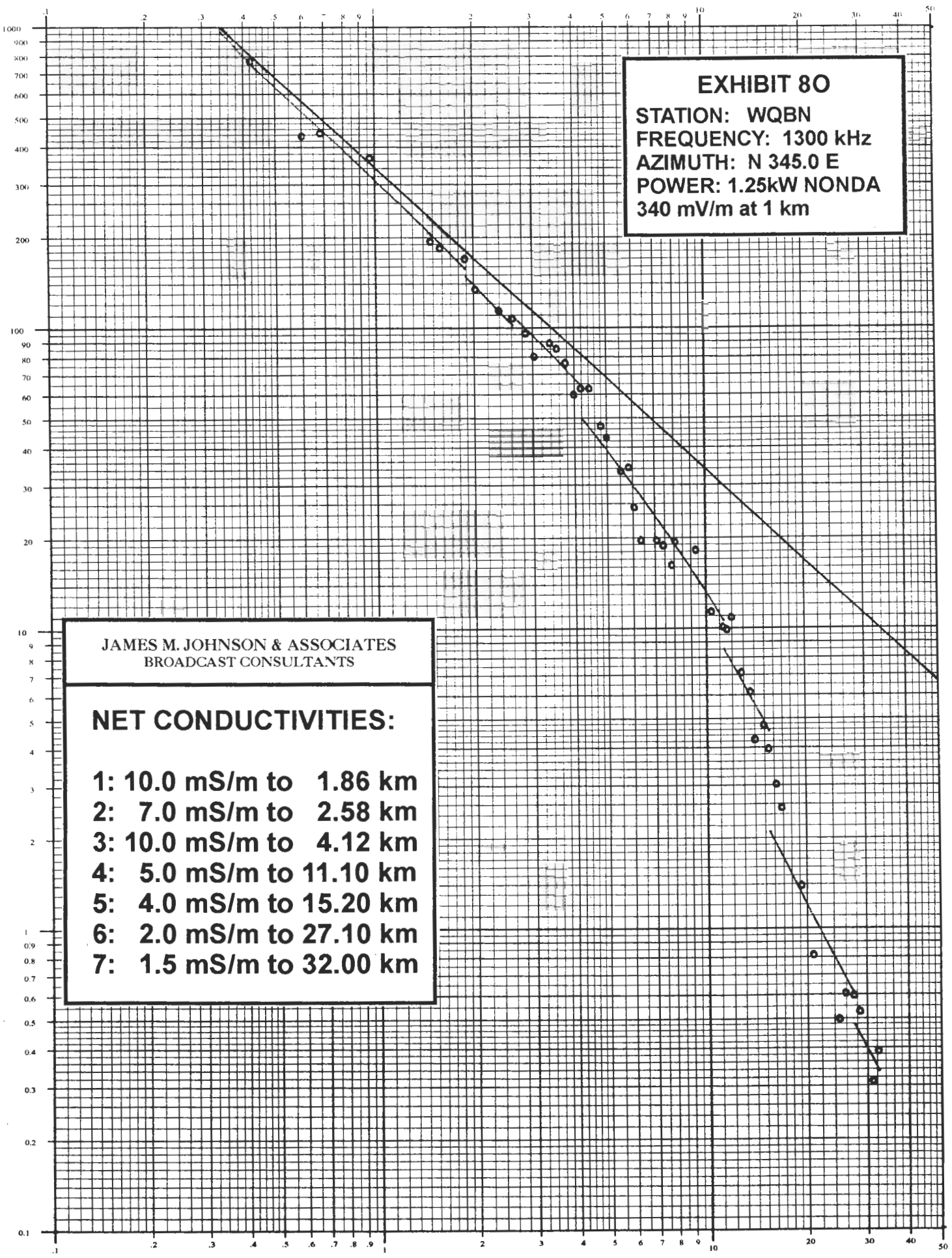
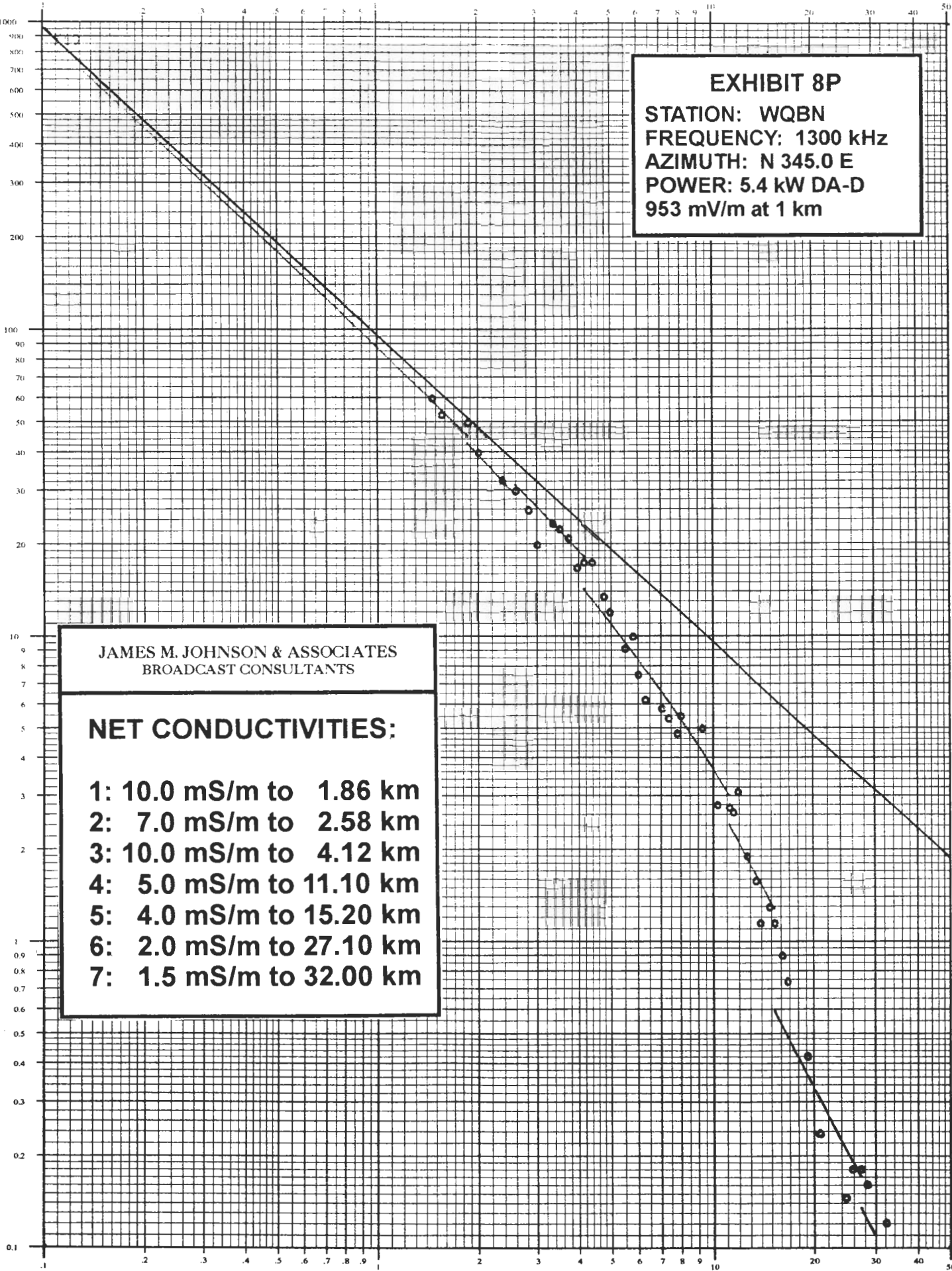


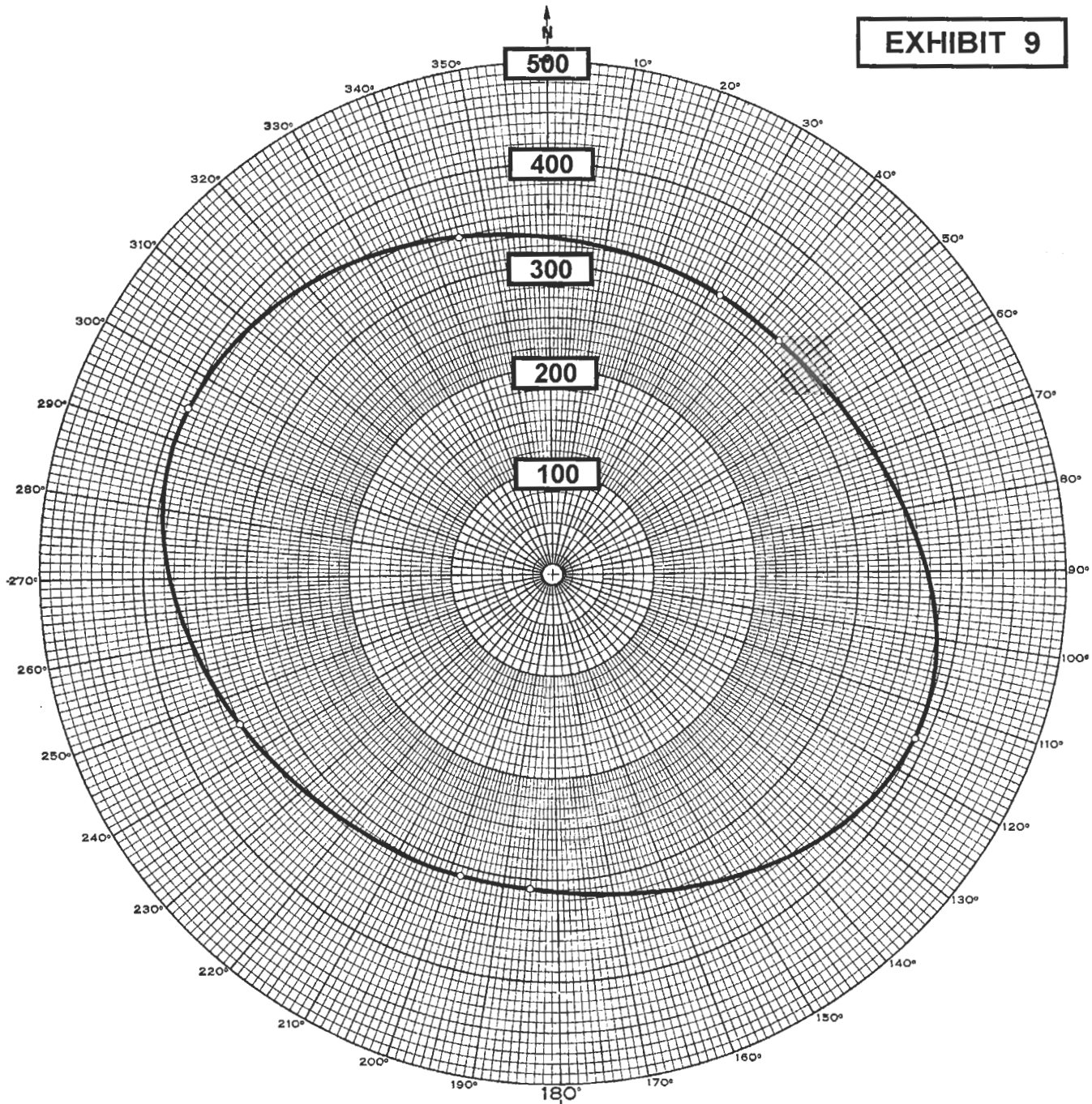
EXHIBIT 8P
STATION: WQBN
FREQUENCY: 1300 kHz
AZIMUTH: N 345.0 E
POWER: 5.4 kW DA-D
953 mV/m at 1 km

JAMES M. JOHNSON & ASSOCIATES
BROADCAST CONSULTANTS

NET CONDUCTIVITIES:

- 1: 10.0 mS/m to 1.86 km**
- 2: 7.0 mS/m to 2.58 km**
- 3: 10.0 mS/m to 4.12 km**
- 4: 5.0 mS/m to 11.10 km**
- 5: 4.0 mS/m to 15.20 km**
- 6: 2.0 mS/m to 27.10 km**
- 7: 1.5 mS/m to 32.00 km**





NON-DIRECTIONAL HORIZONTAL PLANE PATTERN

LAT: 27-56-51 LON: 82-23-45
 Measured RMS: 340 mV/m at 1km

WQBN, TEMPLE TERRACE, FLORIDA
 1300 KHz., 5.0/1.0 Kw, DA-2
 April, 1999

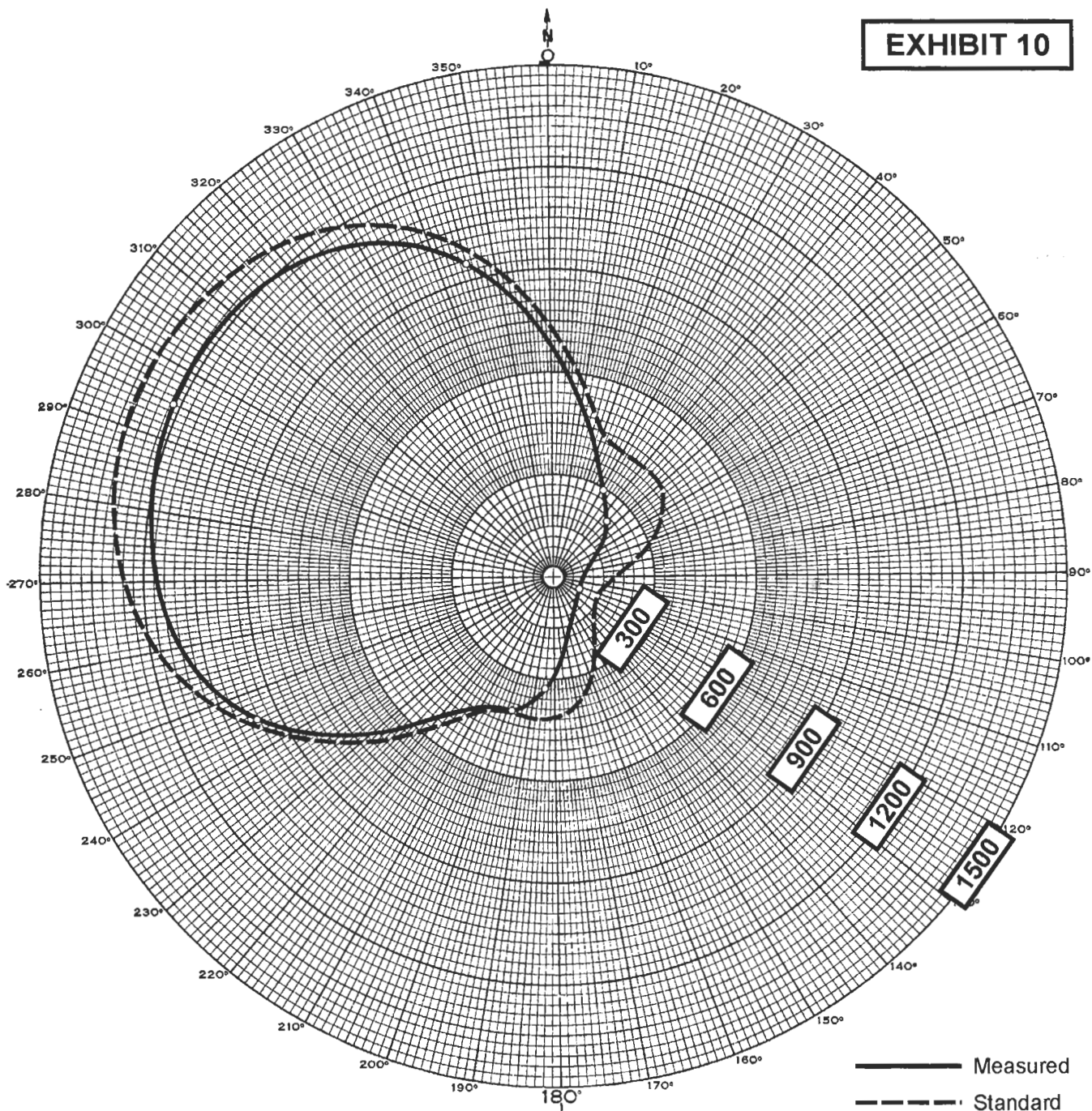
— Measured

JAMES M. JOHNSON & ASSOCIATES
 BROADCAST CONSULTANTS

THEORETICAL TOWER PARAMETERS

| Tower # | Field Ratio | Phase (Degs.) | Spac. (Degs.) | Bear. (Degs.) | Ht (Degs.) |
|---------|-------------|---------------|---------------|---------------|------------|
| 1 | 1.000 | 00.0 | 00.0 | 00.0 | 85.7 |

EXHIBIT 10



DAYTIME HORIZONTAL PLANE PATTERN

————— Measured
 - - - - - Standard

LAT: 27-56-51 LON: 82-23-45
 Measured RMS: 665 mV/m at 1 km

WQBN, TEMPLE TERRACE, FLORIDA
 1300 KHz., 5.0/1.0 Kw, DA-2
 April, 1999

JAMES M. JOHNSON & ASSOCIATES
 BROADCAST CONSULTANTS

ERSS: 828.30 mV/m at 1 km

Q factor at 0 degrees:
 22.36 mV/m at 1 km

Theoretical Pattern RMS:
 727.43 mV/m at 1 km

Standard Pattern RMS:
 764.16 mV/m at 1 km

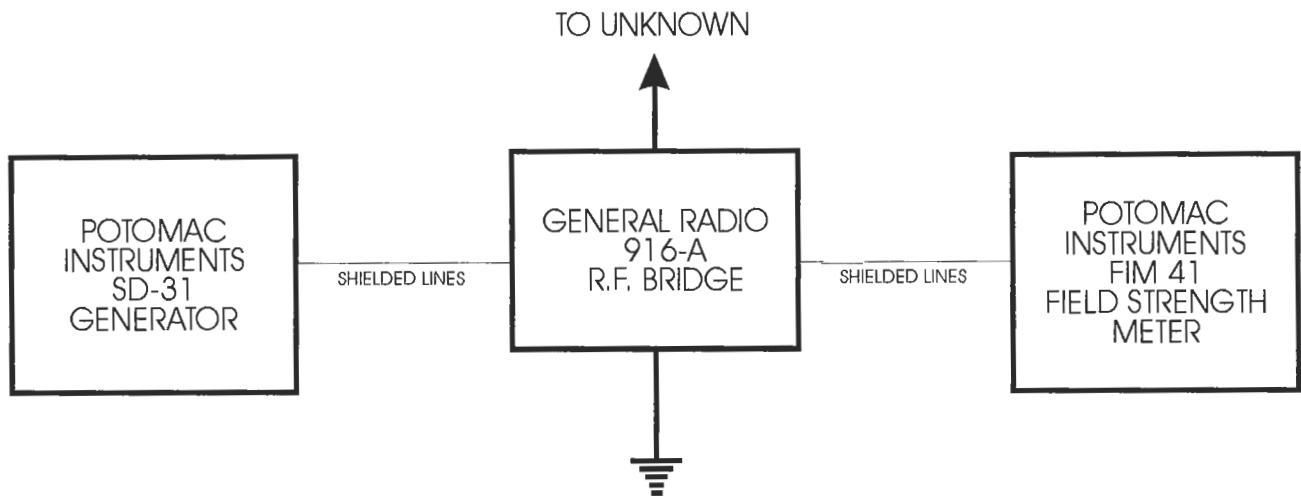
K factor: 592.64

THEORETICAL TOWER PARAMETERS

| Tower # | Field Ratio | Phase (Degs.) | Spac. (Degs.) | Bear. (Degs) | Ht (Degs.) |
|---------|-------------|---------------|---------------|--------------|------------|
| 1 | 1.000 | 00.0 | 00.0 | 00.0 | 85.7 |
| 2 | 0.822 | -102.6 | 99.5 | 295.0 | 102.3 |
| 3 | 0.527 | 157.6 | 99.5 | 115.0 | 85.7 |

EXHIBIT 11

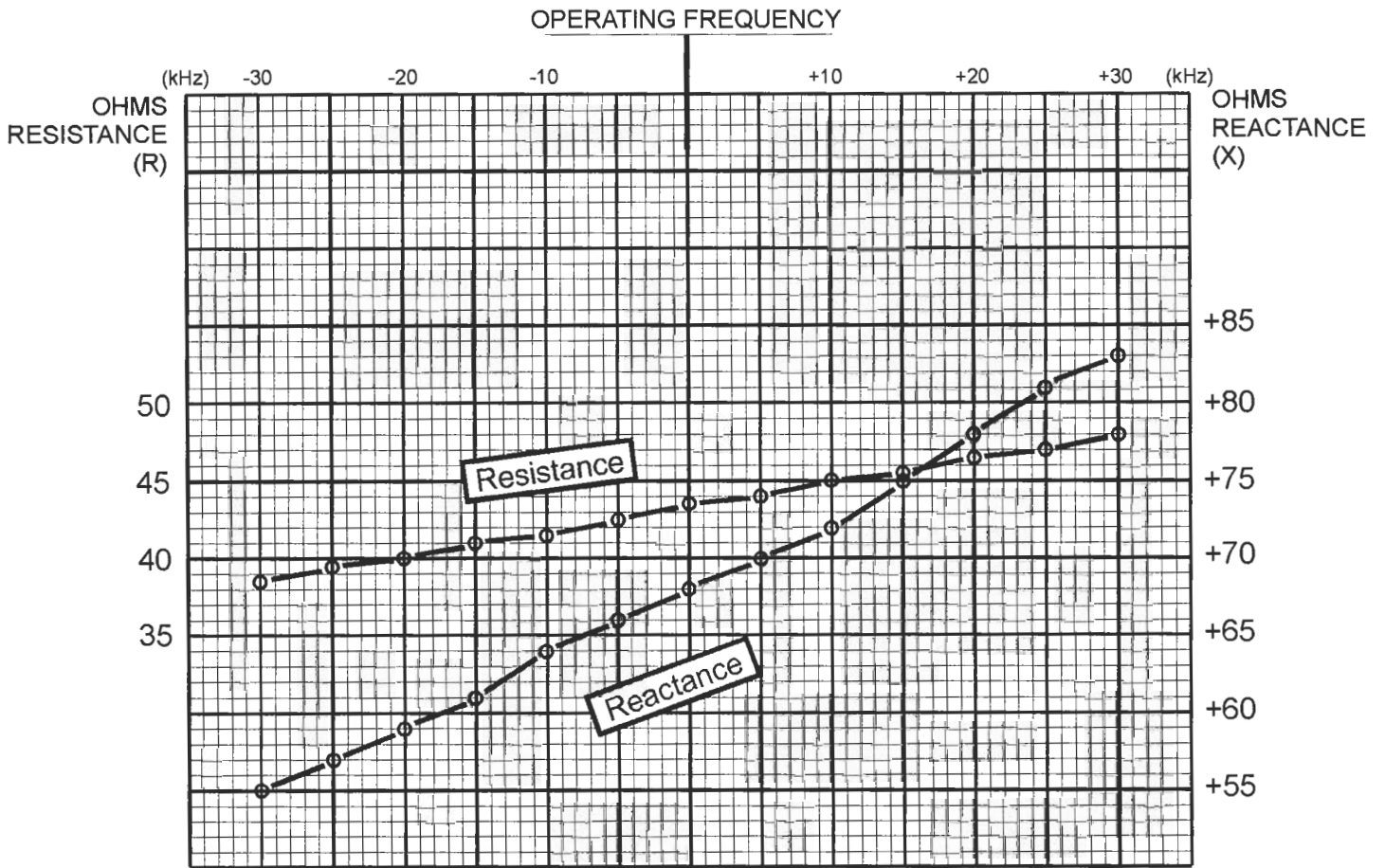
ENGINEERING EXHIBIT
APPLICATION FOR LICENSE AND PROOF OF PERFORMANCE
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz., 5.0/1.0 Kw, DA-2



BLOCK DIAGRAM OF IMPEDANCE MEASURING EQUIPMENT

WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0 Kw DA-2
APRIL, 1999

EXHIBIT 12

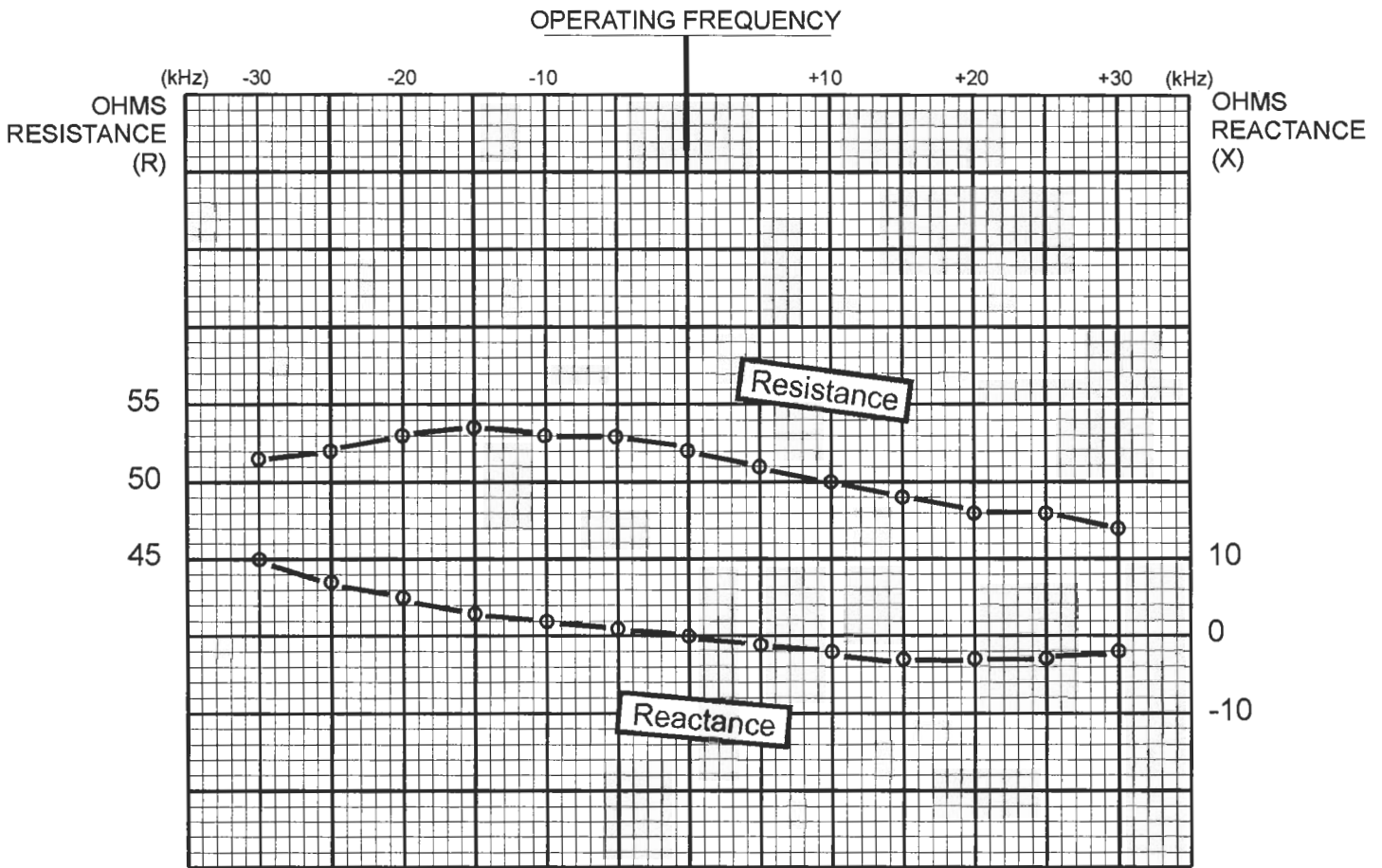


NON-DIRECTIONAL ANTENNA IMPEDANCE MEASUREMENTS

| FREQUENCY | RESISTANCE | REACTANCE |
|-----------|------------|-----------|
| 1270 | 38.5 | 55 |
| 1275 | 39.5 | 57 |
| 1280 | 40 | 59 |
| 1285 | 41 | 61 |
| 1290 | 41.5 | 64 |
| 1295 | 42.5 | 66 |
| 1300 | 43.5 | 68 |
| 1305 | 44 | 70 |
| 1310 | 45 | 72 |
| 1315 | 45.5 | 75 |
| 1320 | 46.5 | 78 |
| 1325 | 47 | 81 |
| 1310 | 48 | 83 |

WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz. 5.0/1.0 Kw DA-2
APRIL, 1999

EXHIBIT 13



COMMON POINT IMPEDANCE MEASUREMENTS

| FREQUENCY | RESISTANCE | REACTANCE |
|-----------|------------|-----------|
| 1270 | 51.5 | 10j |
| 1275 | 52 | 7j |
| 1280 | 53 | 5j |
| 1285 | 53.5 | 3j |
| 1290 | 53 | 2j |
| 1295 | 53 | 1j |
| 1300 | 52 | 0j |
| 1305 | 52 | -1j |
| 1310 | 51 | -2j |
| 1315 | 50 | -3j |
| 1320 | 49 | -3j |
| 1325 | 48 | -3j |
| 1330 | 47 | -2j |

DESCRIPTION OF DAYTIME MONITOR POINTS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz., 5.0/1.0 Kw, DA-2

DIRECTION OF 32° TRUE NORTH.

32 DEGREE MP - CAMERA LOOKING EAST



Leave the WQBN transmitter and proceed West on Washington Blvd. 0.3 miles to 50th Street (US Highway 41). Turn right and proceed North on 50th Street 0.25 miles to Adamo Drive (Highway 60). Turn right and proceed East on Adamo Drive 2.95 miles to Highway 301. Turn left and proceed North 3.75 miles to Breckenridge Parkway. Turn left and proceed West on Breckenridge Parkway for a distance of 225 feet. The Monitor Point is located on the North side of Breckenridge Parkway, 15 feet East of the first light pole. Distance from the transmitter site is 7.13 kilometers.

The field intensity measured at this point is 23.0 mV/m Daytime

DESCRIPTION OF DAYTIME MONITOR POINTS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz., 5.0/1.0 kW, DA-2

DIRECTION OF 115° TRUE NORTH.

115 DEGREE MP - CAMERA LOOKING SOUTHEAST



Leave the WQBN transmitter and proceed West on Washington Blvd. 0.3 miles to 50th Street (US Highway 41). Turn right and proceed North on 50th Street 0.25 miles to Adamo Drive (Highway 60). Turn right and proceed East on Adamo Drive 2.95 miles to Highway 301. Turn right and proceed South on Highway 301, 1.35 miles to the Monitor Point. The Monitor Point is located at the West edge of Highway 301 where the Eastbound Cross-town Expressway exit ramp joins the Highway 301. The location is 10 feet south of the "Yield" sign, which is 60 feet north of light pole #729. Distance from the transmitter site is 4.83 kilometers.

The field intensity measured at this point is 9.0 mV/m Daytime

DESCRIPTION OF DAYTIME MONITOR POINTS
WQBN, TEMPLE TERRACE, FLORIDA
1300 Khz., 5.0/1.0 kW, DA-2

DIRECTION OF 198° TRUE NORTH.

198 DEGREE MP - CAMERA LOOKING SOUTHWEST



Leave the WQBN transmitter and proceed West on Washington Blvd. 0.3 miles to 50th Street (US Highway 41). Turn left and proceed South on 50th Street 1.75 miles to Causeway Blvd. Turn right and proceed West on Causeway Blvd. 0.2 miles to 47th Street. Turn right and proceed North 0.1 mile to El Camino Blanco Blvd. Turn right and proceed East on El Camino Blanco Blvd. 330 feet to the Monitor Point which is located in the vacant lot just East of 4711 El Camino Blanco Blvd by the marker. Distance from the transmitter site is 2.81 kilometers.

The field intensity measured at this point is 125 mV/m Daytime

EXHIBIT 15

MAP OF MONITOR POINT LOCATIONS
WQBN, TEMPLE TERRACE, FLORIDA
APRIL, 1999

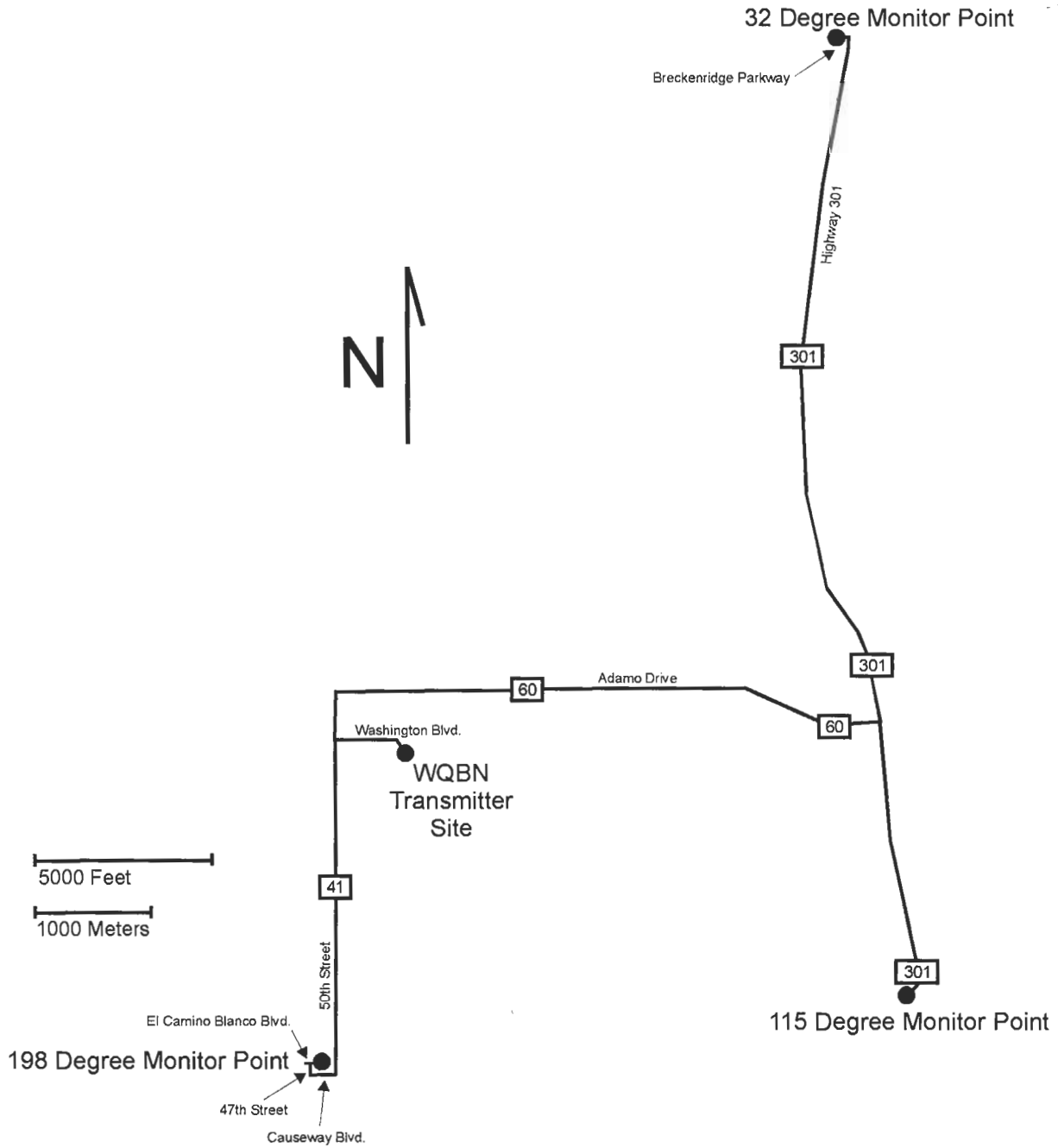
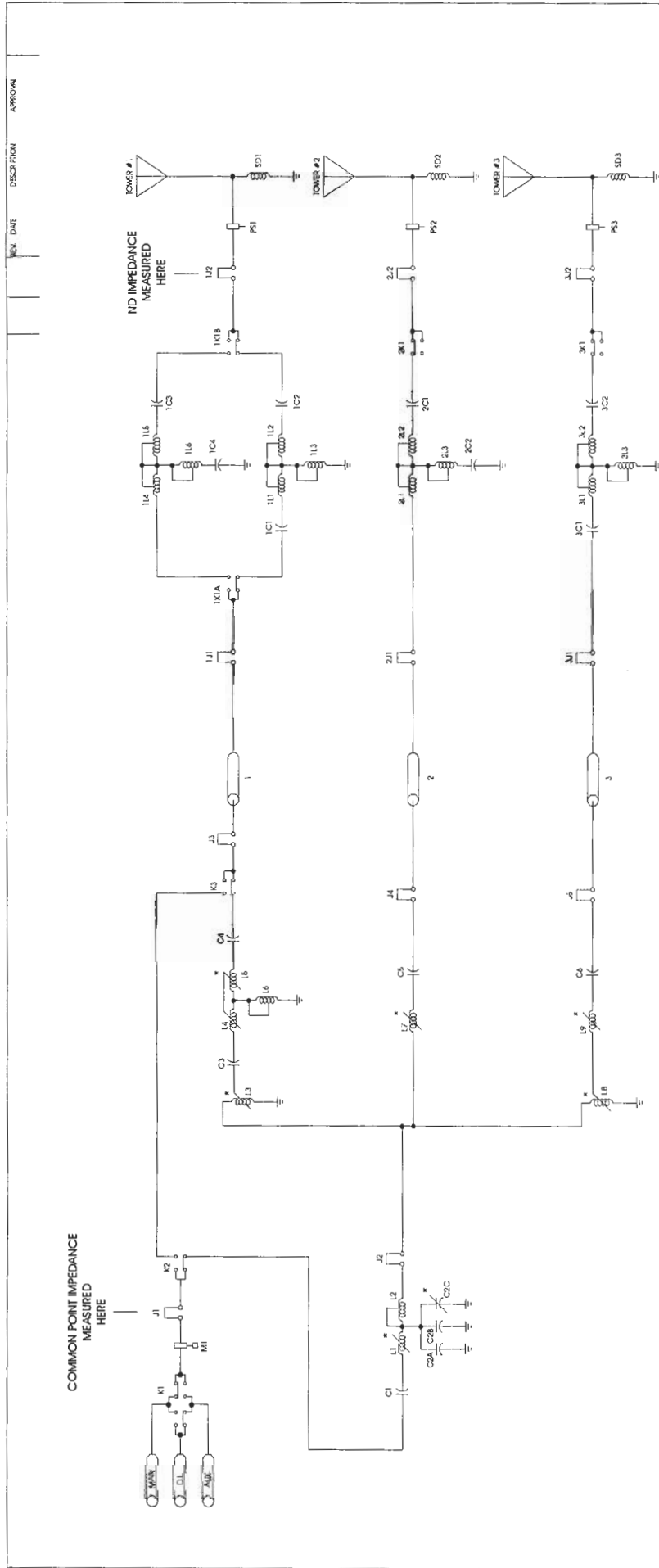


EXHIBIT 16

**SCHEMATIC OF PHASING AND COUPLING
WQBN, TEMPLE TERRACE, FLORIDA
1300 KHZ., 5.0/1.0 Kw, DA-2**



NOTES:
1. D1 INDICATES FRONT PANEL CONTROL
2. RF COUPLERS ARE SHOWN IN THE MAINTENANCE MODE OF OPERATION.

| | | |
|-----------------------|------------------|--|
| DRAWN BY M. NELSON | DATE 04/26/99 | PHASETEK INC. |
| CHECKED ENGINEER | | 550 CALIFORNIA RD. QUINCY, ILL. 62431 |
| APP'D | | PHASING & BRANCHING |
| REVIEWED | | RADIO STATION WQBN |
| SCALE N/A | | SIZE B |
| SHEET 1 OF 1 | | DRAWING NO. P2001008 |

File No.: BP-961016AB
Call Sign: WQBN

**AM BROADCAST STATION CONSTRUCTION PERMIT
(DAYTIME ANTENNA)**

1. Permittee: Radio Tropical, Inc.

2. Station location : Temple Terrace, FL
3. Transmitter location : 5207 Washington Blvd.

North Latitude : 27° 56' 51"
West Longitude : 82° 23' 50"

4. Main studio location..... :
*(Listed only if not at transmitter site or not
within boundaries of principal community.)*

5. Remote control location :

6. Transmitter : Type accepted

*(See Section 73.1660, 73.1665 and 73.1670 of the
Commission's Rules.)*

7. Antenna and ground system: Attached

Average hours of sunrise and sunset:
Standard Time (Non-Advanced)

Provided With Previous
Authorization

8. Obstruction marking and lighting specifications: FCC Form 715, paragraphs: 1, 3, 11, 21 & 22 (Twr #2 only.)
9. Operating Assignment

Frequency : 1300 kHz
Power-Night : 1.0 kw (Directional, per BL-821026AJ)
Day : 5.0 kw (Directional)
Hours of Operation : Unlimited
10. Conditions : Attached

11. Deadline for completion of construction and filing FCC Form 302: 18 months from the date of grant (shown below)

Subject to the provisions of the Communications Act of 1934, as amended, treaties, and Commission Rules, and further subject to conditions set forth in this permit, authority is hereby granted to construct an AM broadcast station located and described as above.

Equipment and program tests shall be conducted only pursuant to Sections 73.1610 and 73.1620 of the Commission Rules.

This permit shall be forfeited if the station is ready for operation within the time specified or within such further time as the Commission may allow unless completion of the station is prevented by causes not under the control of the permittee. See Section 73.3599 of the Commission's Rules.

CNM

*This construction permit consists of this page and page(s): 2 & 3

Dated:

MAY 2 1997

FEDERAL
COMMUNICATIONS
COMMISSION



File No.: BP-961016AB

Call Sign: WQBN

1. **DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM**

No. and Type of Elements: Three uniform cross-section, guyed, series-excited vertical steel radiators.

Height above Insulators: #1 and #3: 55 m (85.7°); #2: 65.5 m (102.3°)

Overall Height: #1 and #3: 56 m; #2: 67 m

Spacing and Orientation: Using Tower #1 as a reference, tower #2 is spaced 99.5° on a bearing of 295° True; tower #3 is spaced 99.5° on a bearing of 115° True.

Non-Directional Antenna: None

Ground System: 120 equally spaced buried copper radials about the base of each tower; each 64 meters in length except at the property boundary or where shortened and bonded to a transverse copper strap midway between towers.

Theoretical RMS: 727.43 mV/m/km

Standard RMS: 764.16 mV/m/km

Q: 22.36 mV/m

2. **THEORETICAL SPECIFICATIONS**

| Towers: | #1(C) | #2(NW) | #3(SE) |
|--------------|-------|---------|--------|
| Phasing: | 0.0° | -102.6° | 157.6° |
| Field Ratio: | 1.00 | 0.822 | 0.527 |

3. The inverse distance field strength at a distance of one kilometer from the above antenna in the directions specified shall not exceed the following values:

Daytime

| <u>Azimuth</u> | <u>Radiation</u> |
|----------------|------------------|
| 32.0° | 415.7 mV/m |
| 115.0° | 149.6 mV/m |
| 198.0° | 415.7 mV/m |

FCC Form 353-A
June 1980

File No.: BP-961016AB

Call Sign: WQBN

THE AUTHORITY GRANTED IS SUBJECT TO THE FOLLOWING CONDITIONS:

Painting and lighting of Tower #2 shall be maintained in accordance with paragraphs 1, 3, 11, 21 and 22 of FCC Form 715. Marking and lighting are not required for Towers #1 and #3.

Permittee shall install a type accepted transmitter, or submit an application (FCC Form 301) along with data prescribed in Section 73.1660(b) should a non-type accepted transmitter be proposed.

Complete nondirectional and daytime directional proofs of performance shall be submitted before program tests are authorized. The nondirectional and directional field strength measurements must be made under similar environmental conditions.