

APPLICATION FOR MINOR MODIFICATION OF
A NON-COMMERCIAL DIGITAL TELEVISION
BROADCAST STATION CONSTRUCTION
PERMIT FCC FILE NUMBER: BPEDT-19990223KE
WAIQ-DT CHANNEL 27 WITH AN ERP OF 750
KW, AND A NON-DA ANTENNA HAAT OF 175.8
METERS FOR ALABAMA EDUCATIONAL
TELEVISION COMMISSION
MONTGOMERY, ALABAMA

KESSLER & GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS

20021106

Prepared by Ryan Wilhour

KG&A

507 N.W. 60th Street, Suite C
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ENGINEERING STATEMENT OF RYAN C. WILHOUR OF THE FIRM OF
KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS IN
CONNECTION WITH AN APPLICATION FOR A MINOR MODIFICATION OF
A CONSTRUCTION PERMIT FOR WAIQ-DT WHICH IS PROPOSED TO
OPERATE ON DTV CHANNEL 27 WITH A MAXIMUM EFFECTIVE RADIATED
POWER OF 750 KILOWATTS HORIZONTALLY POLARIZED AT AN
EFFECTIVE ANTENNA HEIGHT OF 175.8 METERS ABOVE AVERAGE
TERRAIN IN THE VICINITY OF MONTGOMERY, ALABAMA

PROCLAMATION OF ENGINEER

I, Ryan C. Wilhour, am an associate of Kessler and Gehman Associates, Inc. with offices in Gainesville, Florida. I am a graduate of the University of Florida with a Bachelor of Science Degree in electrical engineering.

This firm has been employed by Alabama Educational Television Commission to make engineering studies and to prepare the engineering portion for an application for a minor modification to a construction permit for a digital television broadcast station WAIQ-DT to operate on DTV channel 27 with a maximum effective radiated power of 750 kilowatts horizontally polarized at an effective antenna height of 175.8 meters above average terrain in the vicinity of Montgomery, Alabama. This application is in response to FCC / DA # DA-02-2366, MB Docket No. 02-132 Titled: "In the Matter of Amendment of Section 73.622(b), Table of Allotments, Digital Television Broadcast Stations. (Montgomery, Alabama)", which is a Report and Order that amended the DTV table of allotments to specify channel 27 lieu of channel 14. The instant application has been prepared in response to paragraph 5 which orders Alabama Educational Television Commission to submit to the Commission a minor change application for a construction permit specifying the ordered parameters.

ATTACHED FIGURES

In carrying out the engineering studies the following attached figures were prepared:

1. Proposed engineering specifications (Exhibit E1)
2. Elevation drawing of the antenna system (Exhibit E2)
3. USGS 7.5 minute topographic quadrangle showing the proposed transmitter location and coordinate lines (Exhibit E3)
4. Antenna elevation pattern (Exhibit E4)
5. Map showing the predicted DTV coverage contour (Exhibit E5)
6. Environmental Impact / RFR Hazard Analysis (Exhibit E6)

TRANSMITTER TOWER

Alabama Public Television Commission proposes to operate the DTV facilities of WAIQ-DT at the existing WAIQ-TV transmit tower with the FCC tower registration number 1036422. It is proposed to remove the WAIQ-TV NTSC top mounted broadcast antenna and replace it with a broadband antenna that is capable of transmitting the WAIQ NTSC and DTV format on channels 26 and 27 respectively. The proposed antenna is 2.1 meters shorter than the existing antenna. The FAA has been notified of the overall tower height reduction and is pending a new aeronautical study number. Upon receipt of a new FAA aeronautical study number the applicant will file to modify FCC tower registration number 1036422 to reflect the lower elevation.

INTERFERENCE ANALYSIS

The applicant accepts full responsibility for the elimination of any objectionable interference including that caused by intermodulation to facilities in existence or authorized prior to the grant of this application. The instant application does not include interference studies since the table of allotments has been amended; thus all 5 questions in Section VII of FCC form 340dtv are answered as "yes". The instant application is considered a "checklist application".

ENVIRONMENTAL IMPACT / RFR HAZARD ANALYSIS

An analysis has been made of the human exposure to RFR using the calculation methodology described in *OET Bulletin 65, Edition, 97-01*. Exhibit E6 is a RFR study demonstrating compliance within 5% of the most restrictive permissible exposure at any location 2 meters above the ground assuming flat terrain. Exhibit 6 calculations were made using a frequency of 548 MHz, which is the lower edge of the proposed channel. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

Pursuant to *OET Bulletin 65* concerning multiple-user transmitter sites, only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is well within 5% of the most restrictive permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of WAIQ-DT were not taken into account.

A chain link fence shall encompass the WAIQ-DT support structure if it is not already. The applicant will cooperate with any other users of the tower by reducing

the power to the antenna or if necessary completely cutting it off in order to protect maintenance workers on the tower.

DECLARATION OF ENGINEER

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on November 6, 2002.

KESSLER AND GEHMAN ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read "Ryan Wilhour", is written over the printed name.

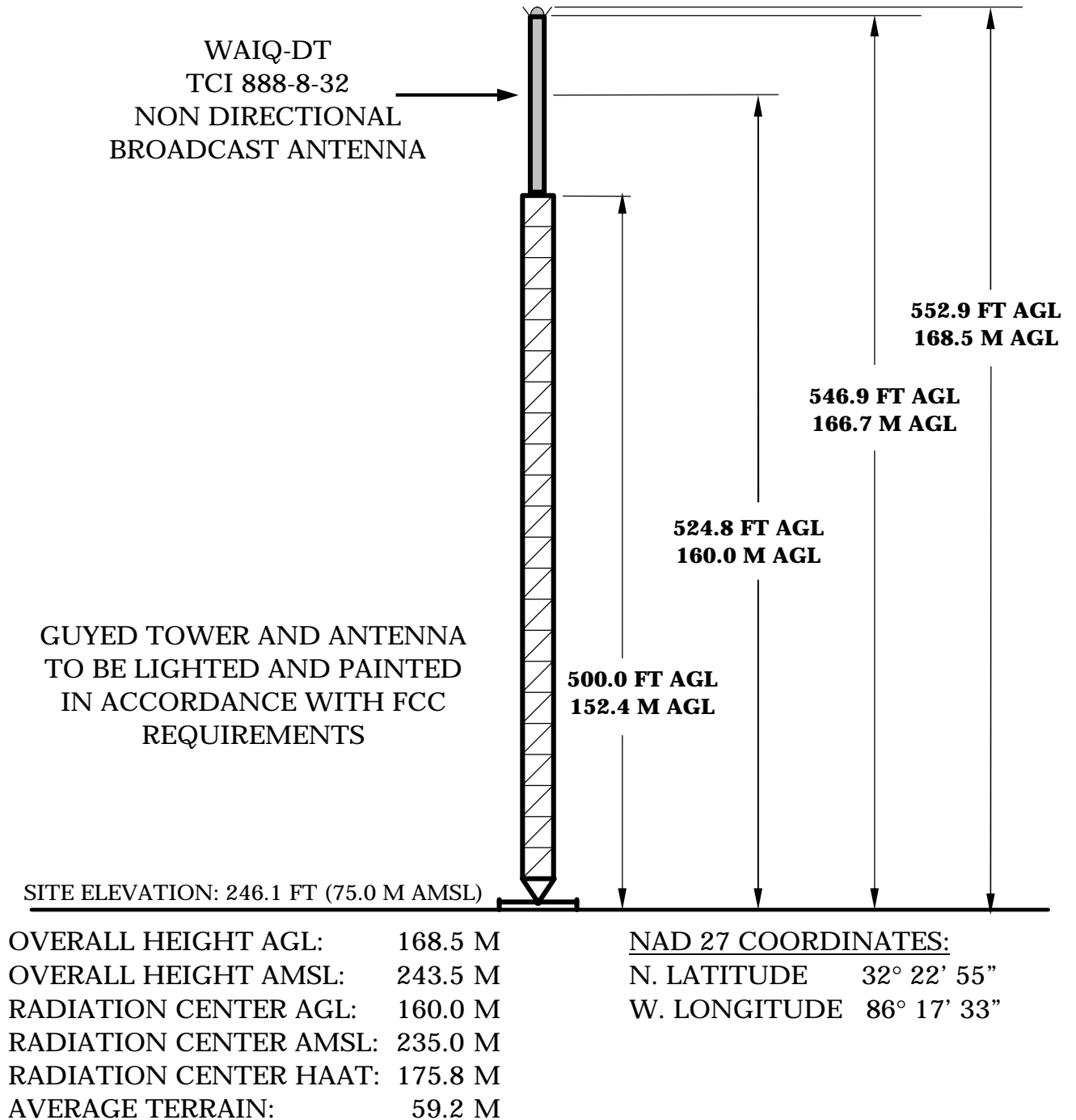
Ryan Wilhour
Consulting Engineer

**WAIQ-DT
MONTGOMERY, ALABAMA**

ENGINEERING SPECIFICATIONS

- A. Transmitter Site (NAD 27)
- | | |
|----------------------------|---|
| North Latitude | 32 ° 22 ' 55 " |
| West Longitude | 86 ° 17 ' 33 " |
| Street Address or Location | 1300 upper Wetumpka Road
Montgomery, Alabama |
- B. Proposed Facility
- | | |
|-------------|-------------|
| DTV Channel | 27 |
| Frequency | 548-554 MHz |
- C. Antenna Height
- | | |
|---|---------|
| Height of Site Above Mean Sea Level (AMSL) | 75.0 m |
| Overall Height of Structure Above Ground
(including all appurtenances) | 168.5 m |
| Overall Height of Structure Above Mean Sea Level
(including all appurtenances) | 243.5 m |
| Height of Site Above Average Terrain | 15.8 m |
| Effective Height of Antenna Above Ground | 160.0 m |
| Effective Height of Antenna Above Average Terrain | 175.8 m |
| Effective Height of Antenna Above Mean Sea Level | 235.0 m |
- D. Antenna Parameters – Horizontal Polarization
- | | |
|--|-----------|
| Maximum Antenna Gain in Beam Maximum | 14.60 dB |
| Maximum Antenna Gain in Horizontal Plane | 14.00 dB |
| Maximum Effective Radiated Power | 28.75 dBk |
| In Beam Maximum | 750.0 kW |
| Maximum Effective Radiated Power | 28.15 dBk |
| In Horizontal Plane | 653.2 kW |

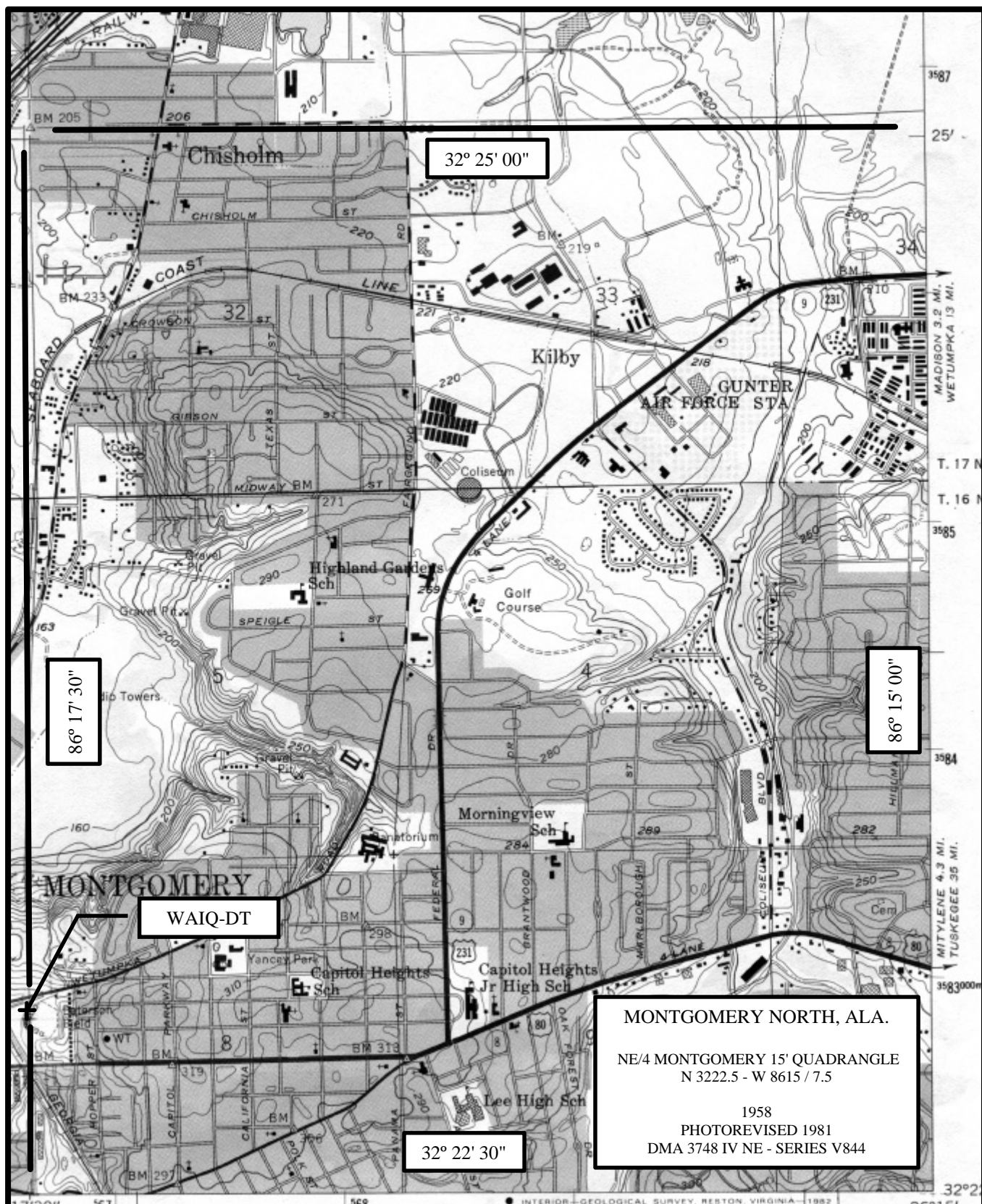
ELEVATION VIEW



NOTE: NOT TO SCALE

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WAIQ-DT
MONTGOMERY, ALABAMA
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EXHIBIT E2



32° 25' 00"

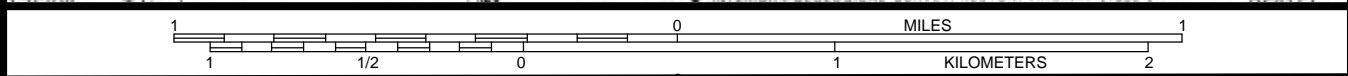
86° 17' 30"

86° 15' 00"

WAIQ-DT

MONTGOMERY NORTH, ALA.
NE/4 MONTGOMERY 15' QUADRANGLE
N 3222.5 - W 8615 / 7.5
1958
PHOTOREVISED 1981
DMA 3748 IV NE - SERIES V844

32° 22' 30"



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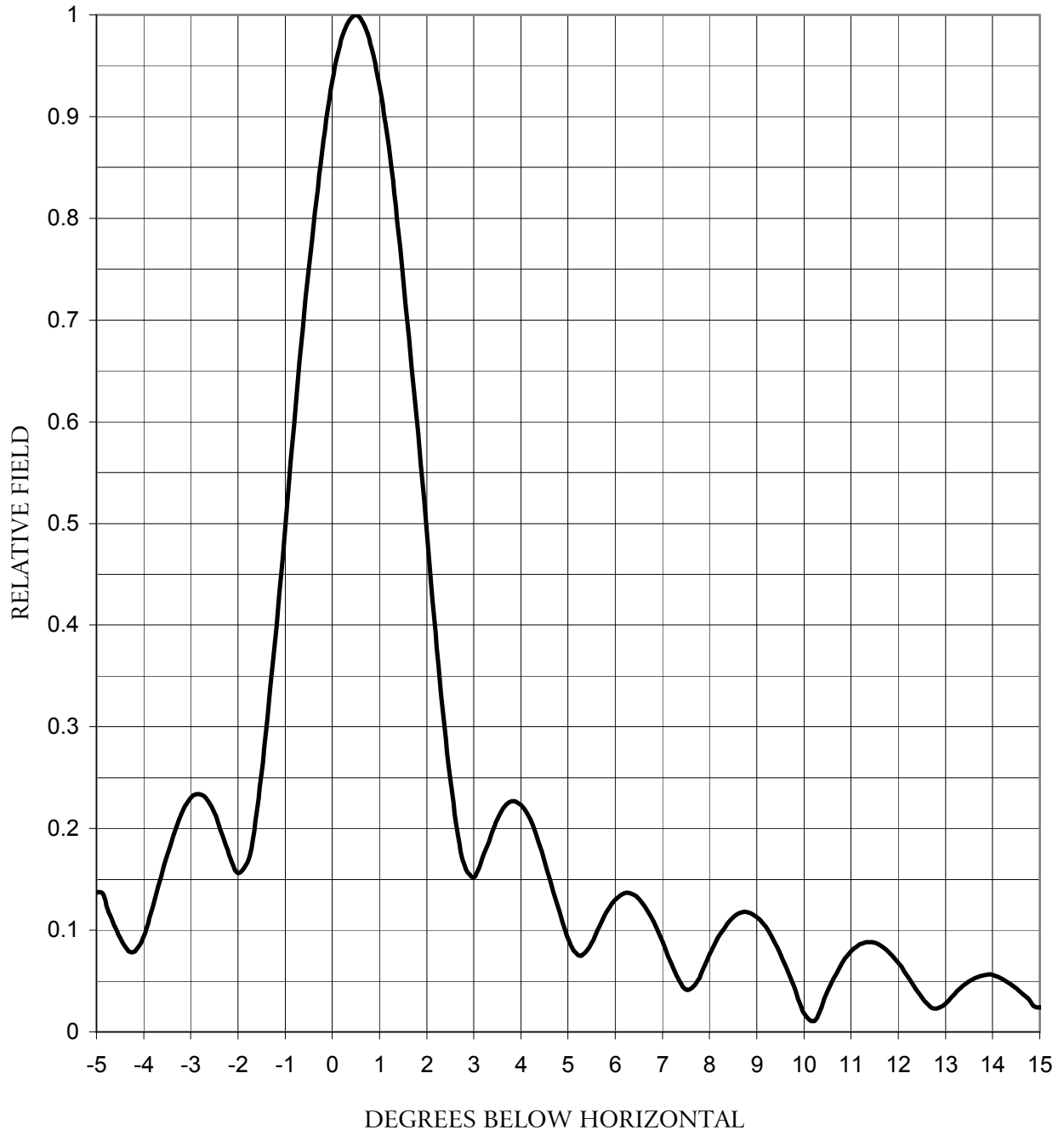
WAIQ - DT
MONTGOMERY, ALABAMA
20021106
EXHIBIT E3

ELEVATION PATTERN

TCI 888-8-32

RMS Gain at Main Lobe 28.9 (14.6 dBd)
RMS Gain at Horizontal 25.2 (14.0 dBd)

Beam Tilt 0.50 deg
Frequency 551.0 MHz



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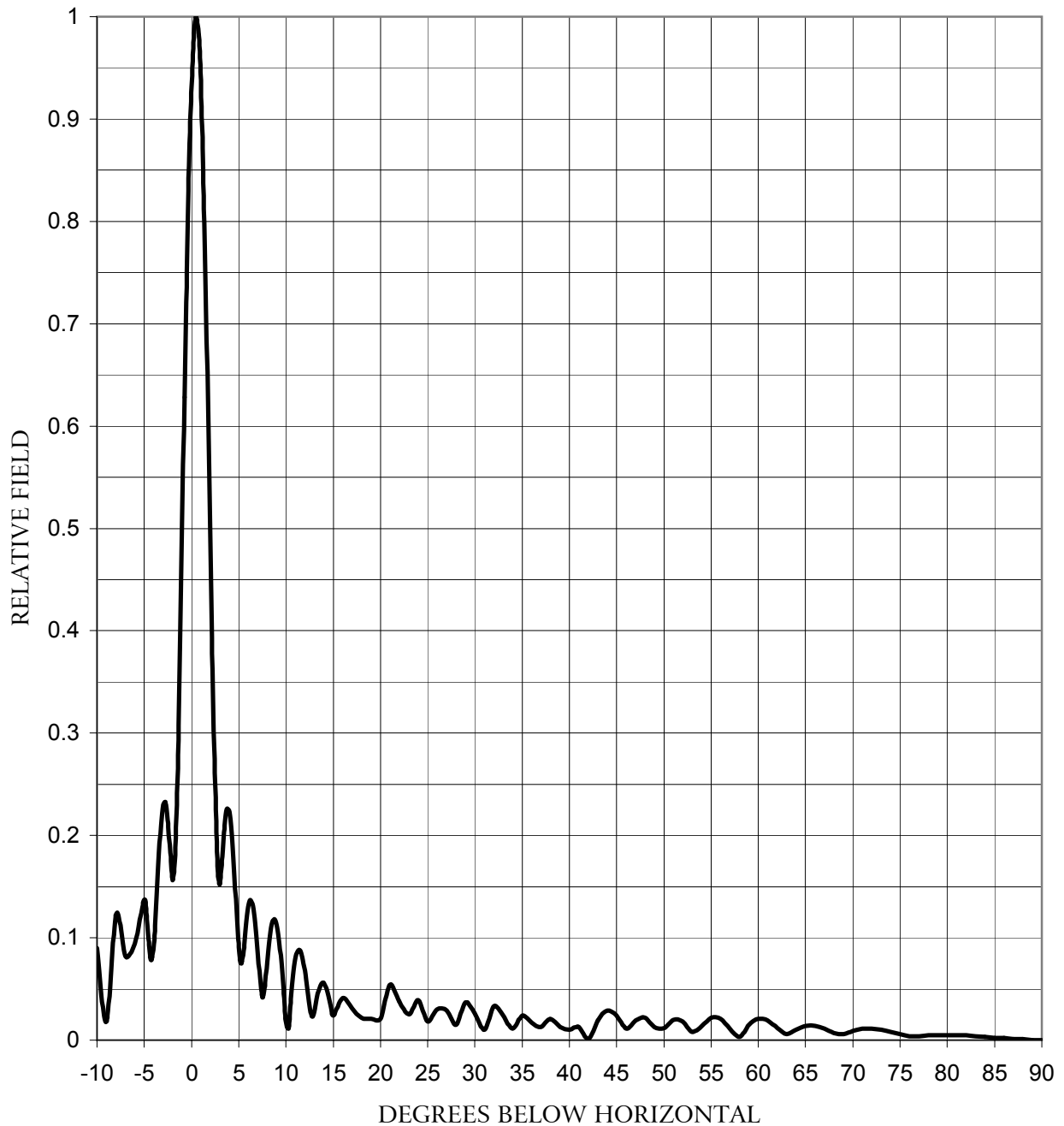
EXHIBIT E4

ELEVATION PATTERN

TCI 888-8-32

RMS Gain at Main Lobe 28.9 (14.6 dBd)
RMS Gain at Horizontal 25.2 (14.0 dBd)

Beam Tilt 0.50 deg
Frequency 551.0 MHz



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EXHIBIT E4

Contour Parameters:

Type: FCC Contour

F(50-90) Cutoff: 40.05 dBu

Population Database: 2000 US Census (PL)

Total Population Within Contour: 597,747

Total Area Within Contour: 20647.71 sq. km

Kessler and Gehman Associates, Inc.

WAIQ-DT

PROPOSED

Latitude: 32-22-55 N

Longitude: 086-17-33 W

ERP: 750.00 kW

Channel: 27

Frequency: 551.0 MHz

AMSL Height: 235.0 m

Elevation: 75.0 m

HAAT: 175.8 m

Horiz. Pattern: Omni

Vert. Pattern: Yes

Elec Tilt: 0.5

Time Variability: 90.0%

Sit. Variability: 50.0%

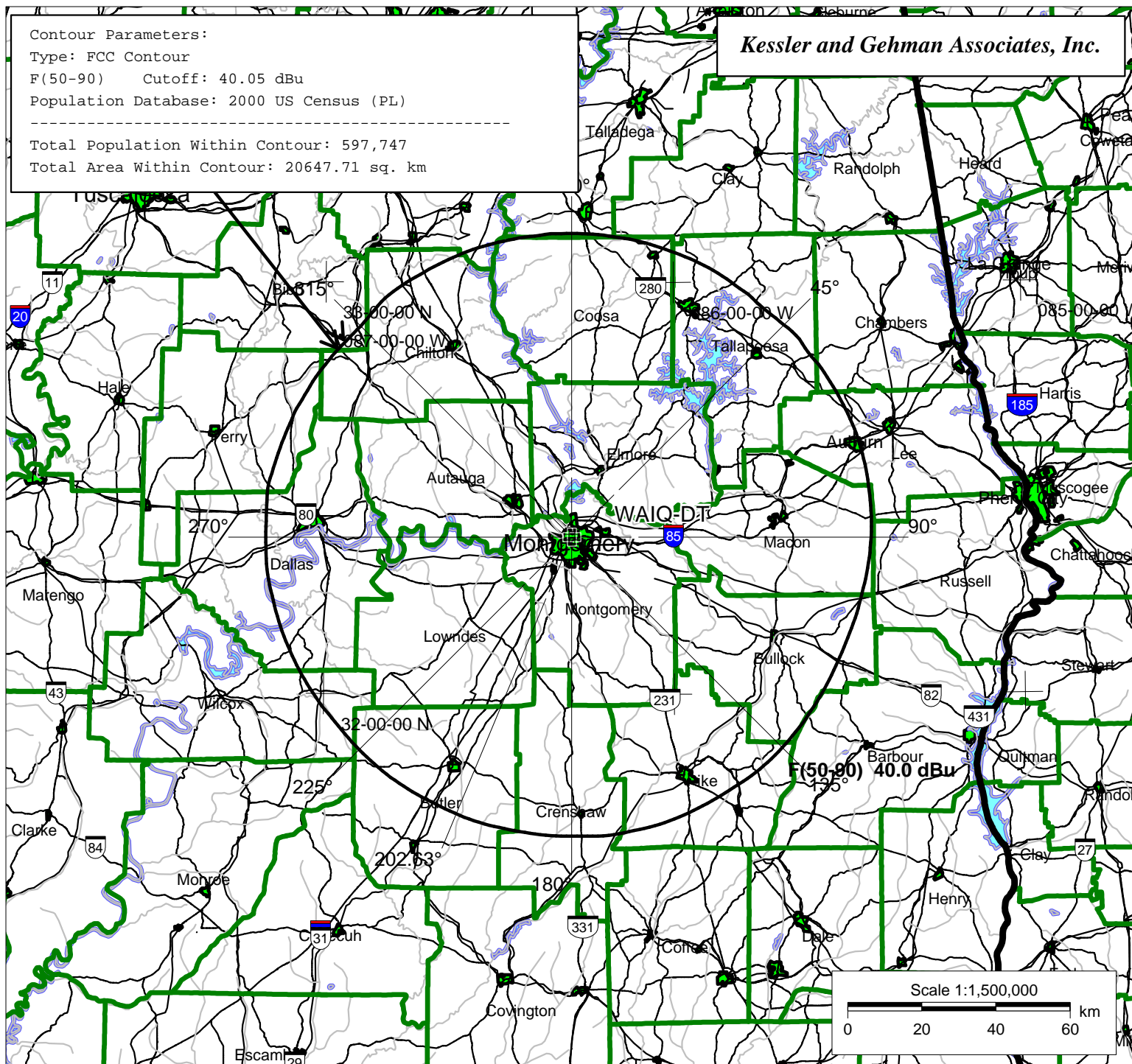
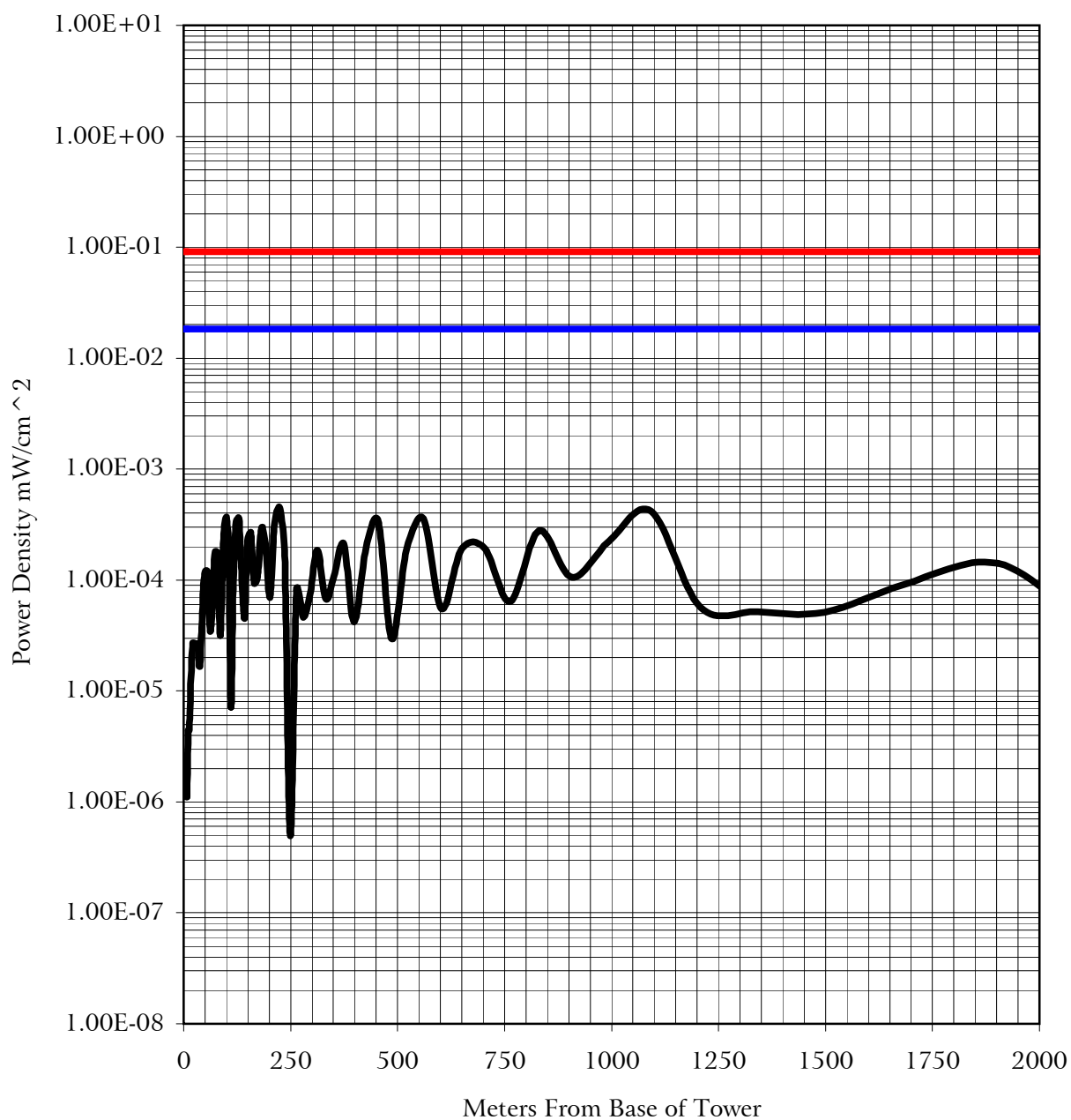


EXHIBIT E5

RFR STUDY



- 5% Of Maximum Occupational or Controlled Exposure
- 5% Of Maximum General Population or Uncontrolled Exposure
- Proposed Power Density 2 Meters Above Ground Level ON FLAT TERRAIN