WEIQ-DT CHANNEL 41
MINOR MODIFICATION OF
CONSTRUCTION PERMIT APPLICATION
MOBILE, ALABAMA
(Alabama Education Television Commission)

KESSLER AND GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS

20100927

Prepared by William T. Godfrey, Jr.

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ENGINEERING TECHNICAL STATEMENT PREPARED BY WILLIAM T. GODFREY, JR., WITH THE FIRM KESSLER AND GEHMAN ASSOCIATES, INC. (KGA), TELECOMMUNICATIONS CONSULTING ENGINEERS IN CONNECTION WITH A MINOR MODIFICATION OF CONSTRUCTION PERMIT (CP) APPLICATION REQUESTING AUTHORIZATION TO DECREASE ALABAMA EDUCATIONAL TELEVISION COMMISSION'S (AETC) AUTHORIZED EFFECTIVE RADIATED POWER (ERP) FOR ITS WEIQ-DT CHANNEL *41 DIGITAL TELEVISION BROADCAST FACILITY (BPEDT-20080619AGR), MOBILE, ALABAMA.

The firm Kessler and Gehman Associates, Inc. (KGA) has been retained by Alabama Educational Television Commission (AETC), Mobile, AL to prepare engineering studies and the engineering portion of a minor modification of construction permit application requesting authorization to decrease the Effective Radiated Power (ERP) of the authorized WEIQ-DT Channel *41 digital television broadcast facility (BPEDT-20080619AGR) from 1,000 kW to 464 kW.

Discussion

AETC is licensed to operate the WEIQ-DT Channel *41 facility with an ERP of 199 kW at an antenna height radiation center of 158 meters Above Ground Level (AGL) using a Dielectric model TFU-GTH-R DC, top-mount, nondirectional antenna. AETC is also authorized (BPEDT-20080619AGR) to operate the WEIQ-DT Channel *41 facility with an ERP of 1,000 kW at an antenna height radiation center of 158 meters AGL using a Dielectric model TFU-GTH-R DC, top-mount, nondirectional antenna. However, the construction permit (CP) authorizing an ERP of 1,000 kW expires on 9/23/2011 and AETC determined that it will not have the funds to purchase the required equipment to build it. AETC is currently operating at a maximum ERP of 464 kW under the authority of an STA (BDSTA-20100909ABK). 464 kW is the maximum ERP the WEIQ-DT facility can operate at with its existing digital transmitter maximized. Also, AETC noticed that the antenna nomenclature was not correct in the CDBS. The CDBS depicts a Dielectric model TFU-30GTH-R DC for the licensed and authorized antenna and it should be a Dielectric model TFU-30GTH O4 DC. No changes are being made to the antenna; it's simply a nomenclature correction. Accordingly, this minor modification of construction permit application requests authorization to: 1) decrease the authorized ERP from 1,000 kW to 464 kW; and 2) correct the antenna nomenclature in the CDBS from a Dielectric model TFU-30GTH-R DC to a Dielectric model TFU-30GTH O4 DC.

Exhibit 8 demonstrates that the proposed WEIQ-DT CH *41 F(50,90) 48.0 dBuV/m principal community contour will completely encompass Mobile, AL in all azimuthal directions. Therefore, the proposed station meets the principal community coverage requirements pursuant to section 73.625(a) of the FCC Rules.

Exhibit 9 depicts the licensed, authorized (CP) and proposed WMAH -DT Channel *41 F(50,90) 41.3 dBuV/m protected noise limited contours. Referring to Exhibit 9, it can be seen that the proposed facility's F(50,90) 41.3 dBuV/m protected noise limited contour (red) exceeds the licensed facility's F(50,90) 41.3 dBuV/m protected noise limited contour (blue) in all azimuthal directions. The green contour represents the authorized (CP) facility's F(50,90) 41.3 dBuV/m protected noise limited.

Exhibits

Exhibits 1 and 2 represent WEIQ's administration data, antenna and antenna structure specifications.

Exhibit 3 depicts the profile view of the WEIQ-DT Channel *41 antenna on the antenna structure with all the appropriate elevations (not to scale).

Exhibits 4 (-3° through 11°) and 5 (-10° through 90°) display the elevation pattern and Exhibit 6 displays the elevation pattern tabulation.

Exhibit 7 depicts the location of the WEIQ-DT transmitter site using the Bridgehead, Alabama 7.5 Series Topographic map.

Exhibit 8 is a principal community contour map demonstrating that the proposed WEIQ-DT Channel *41 facility's F(50,90) 48.0 dBuV/m Principal Community contour will completely encompass the principal community of Mobile, AL.

Exhibit 9 is a contour map comparing the licensed WEIQ-DT Channel *41 F(50,90) 41.3 dBuV/m contour (blue), the authorized (CP) WEIQ-DT Channel *41 F(50,90) 41.3 dBuV/m contour (green) and the proposed WEIQ-DT Channel *41 F(50,90) 41.3 dBuV/m contour (red).

Environmental Impact

The proposed construction will have no significant environmental impact as defined in §1.1307 of the FCC Rules. The digital transmitter, 6-1/8 inch transmission line and horizontally polarized antenna system shall produce an ERP of 464 kW. It was determined that the maximum lobe of radiation from the base of the tower would occur at approximately 358.8 feet from the base of the tower (625.5 ft radial distance from the antenna center). At approximately 358.8 feet from the base of the tower, the depression angle of the main lobe will be approximately 55° below the horizontal. At that point, the relative field is 0.047 and the power density six feet above the ground is approximately 0.00094 mW/cm^2. This equates to only 0.04% of the Maximum Permissible Exposure (MPE) limits for Occupational/Controlled Exposure and only 0.22% of the MPE limits for General Population/Uncontrolled Exposure authorized by the American National Standards Institute (ANSI). Since operation of the proposed WEIQ-DT Channel *41 facility will not exceed 5.0% of the MPE limit for Occupational/Controlled Exposure or General Population/Uncontrolled Exposure at any point on the ground, the proposed facility is not considered a "significant contributor" to the RF exposure environment pursuant to OET Bulletin 65, Edition 97-01. Therefore, contributions of exposure from other sources were not accounted for in this analysis. It is safe to conclude that the emissions will be insignificant and well within the maximum allowable requirements.

If other antennas are placed on the tower in the future, the licensee will cooperate with those users by reducing or completely terminating the power to the antenna when maintenance workers are in danger from the electromagnetic radiation emanating from the antenna. It is also understood that additional antennas on the support structure could increase the overall RF exposure levels and it is the responsibility of each licensee to ensure that the total RF exposure resulting from the operation of all antennas on the support structure do not exceed the maximum permissible exposure level at any point on the ground.

Certification

This technical statement was prepared by William T. Godfrey, Jr., Telecommunications Technical Consultant with the firm Kessler and Gehman Associates, Inc. having offices in Gainesville, Florida and has been working in the field of radio and television broadcast consulting since 1998. He graduated from the University of North Florida with a Bachelor of Arts degree in Criminal Justice and a minor in Mathematics in 1993. As a Professional in the field of Telecommunications he states under penalty of perjury that the information contained in this report is true and correct to the best of his knowledge and belief.

KESSLER AND GEHMAN ASSOCIATES, INC.

William T. Godfrey, Jr.

WILLIAM T. GODFREY, JR.
Telecommunications Technical Consultant

27 September, 2010

WEIQ-DT CHANNEL 41

Mobile, Alabama

ENGINEERING SPECIFICATIONS

A. ***Transmitter Site:***

Geographic coordinates (NAD 27):

North Latitude	**30° 39' 33"**
West Longitude	**87° 53' 33"**

Transmitter Site Address: **29900 Wayside Drive**
Spanish Fort, AL

B. ***Main Studio Site:***

Street Address **2112 11TH Avenue South,**
Birmingham, AL 35205

C. ***DTV Facility:***

Channel	Number	**41**
	Frequency	**632 - 638 MHz**
	Offset	**N/A**

D. ***Antenna Height:***

Height of Site Above Mean Sea Level (AMSL)	**50.9 M**
Overall Height of Structure Above Ground (including all appurtenances)	**166.2 M**
Overall Height of Structure Above Mean Sea Level (including all appurtenances)	**217.1 M**
Height of Site Above Average Terrain	**21.9 M**
Antenna Height Radiation Center (R/C) Above Ground	**158.0 M**
Antenna Height R/C Above Average Terrain	**179.9 M**
Antenna Height R/C Above Mean Sea Level	**208.9 M**
Average of All Non-Odd Radials	**29.0 M**

E. ***System Parameters – Horizontal Polarization:***

Transmitter Power Required	**25.3 kW**
Maximum Power Input to Antenna	**18.9 kW**
Transmission Line Loss	**1.25 dB**
Transmission Line Efficiency	**75.0%**
Maximum Antenna Gain in Beam Maximum	**13.89 dB**
Maximum Antenna Gain in Horizontal Plane	**13.20 dB**
Maximum Effective Radiated Power	**26.67 dBk**
In Beam Maximum	**464.0 kW**
Maximum Effective Radiated Power	**25.98 dBk**
In Horizontal Plane	**395.8 kW**

WEIQ-DT CHANNEL 41

Mobile, Alabama

DATA FOR EXISTING
NONDIRECTIONAL TRANSMITTING ANTENNA

A. ***Antenna:*** Dielectric Model TFU-30GTH O4 DC, horizontally polarized, nondirectional, top-mount antenna.

B. ***Electrical Beam Tilt:*** 0.50 degrees

C. ***Mechanical Beam Tilt:*** None

D. ***RMS Gain***

RMS Gain	Horizontal Polarization
Maximum:	24.5 (13.89 dBd)
Horizontal:	20.9 (13.20 dBd)

E. ***Length:*** 53.2 feet (16.2 meters) not including appurtenances.

F. ***Transmitter Power Output (TPO):*** 25.3 kW

G. ***Null Fill:*** 10.4%

H. ***Transmission Line:*** 6-1/8” 50-ohm digiTLine

I. ***Transmission Line Loss:*** 0.132 dB/100-feet

J. ***Total Transmission Line:*** 568 feet (173.1 meters)

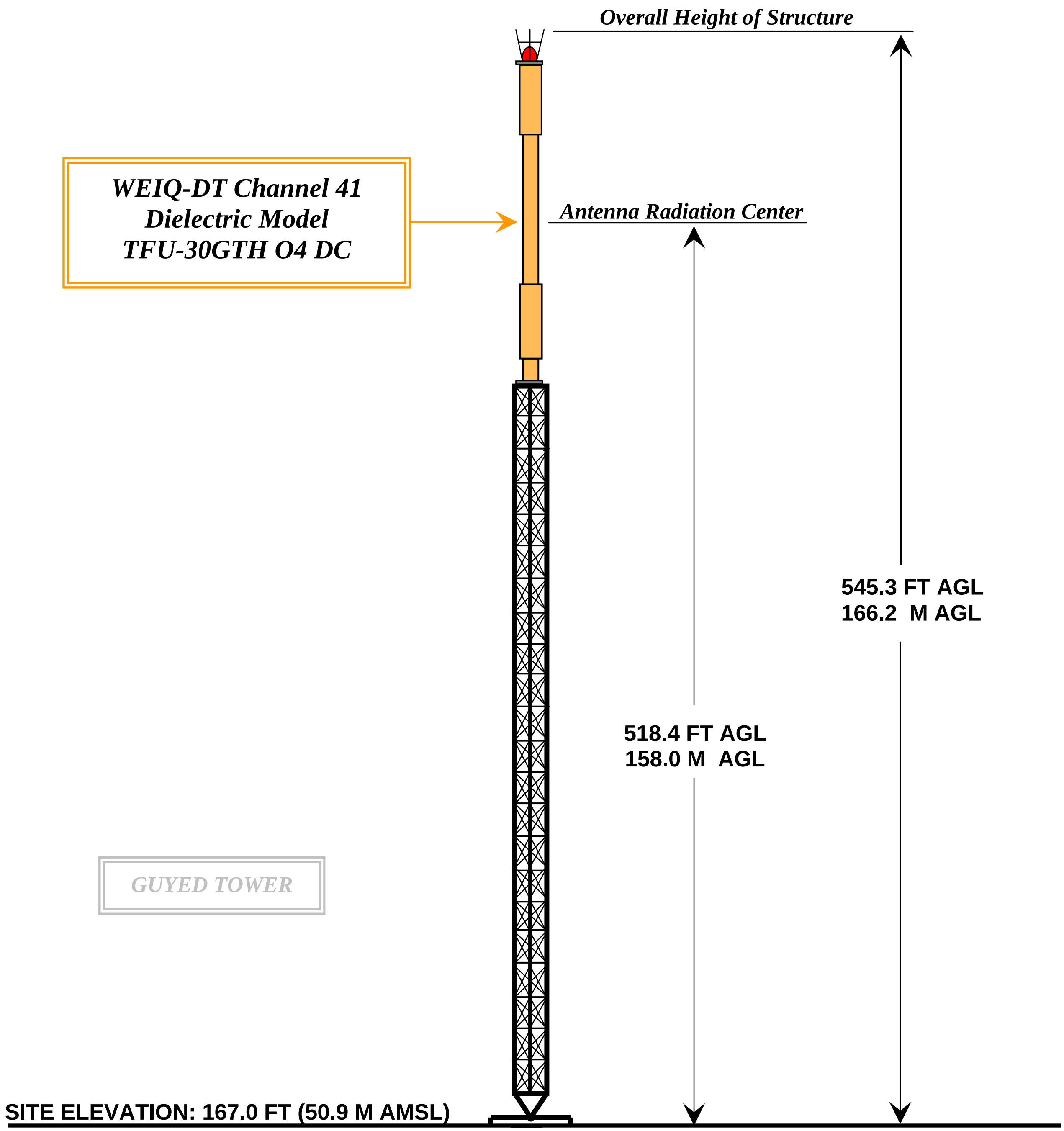
K. ***Transmission Line Attenuation:*** 0.75 dB

L. ***Combiner Attenuation:*** 0.50 dB

M. ***Total Antenna System Loss:*** 1.25 dB

N. ***Transmission Line Efficiency:*** 75.0%

WEIQ-DT ELEVATION VIEW



OVERALL HEIGHT AGL:	166.2 M
OVERALL HEIGHT AMSL:	217.1 M
RADIATION CENTER AGL:	158.0 M
RADIATION CENTER AMSL:	208.9 M
RADIATION CENTER HAAT:	179.9 M
AVG OF ALL NON-ODD RADIALS:	29.0 M
SITE HAAT:	21.9 M

COORDINATES (NAD 27):

N. LATITUDE	30° 39’ 33”
W. LONGITUDE	87° 53’ 33”

Antenna Structure Registration Number:
1036419

NOTE: NOT TO SCALE

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WEIQ-DT CHANNEL 41

Mobile, Alabama

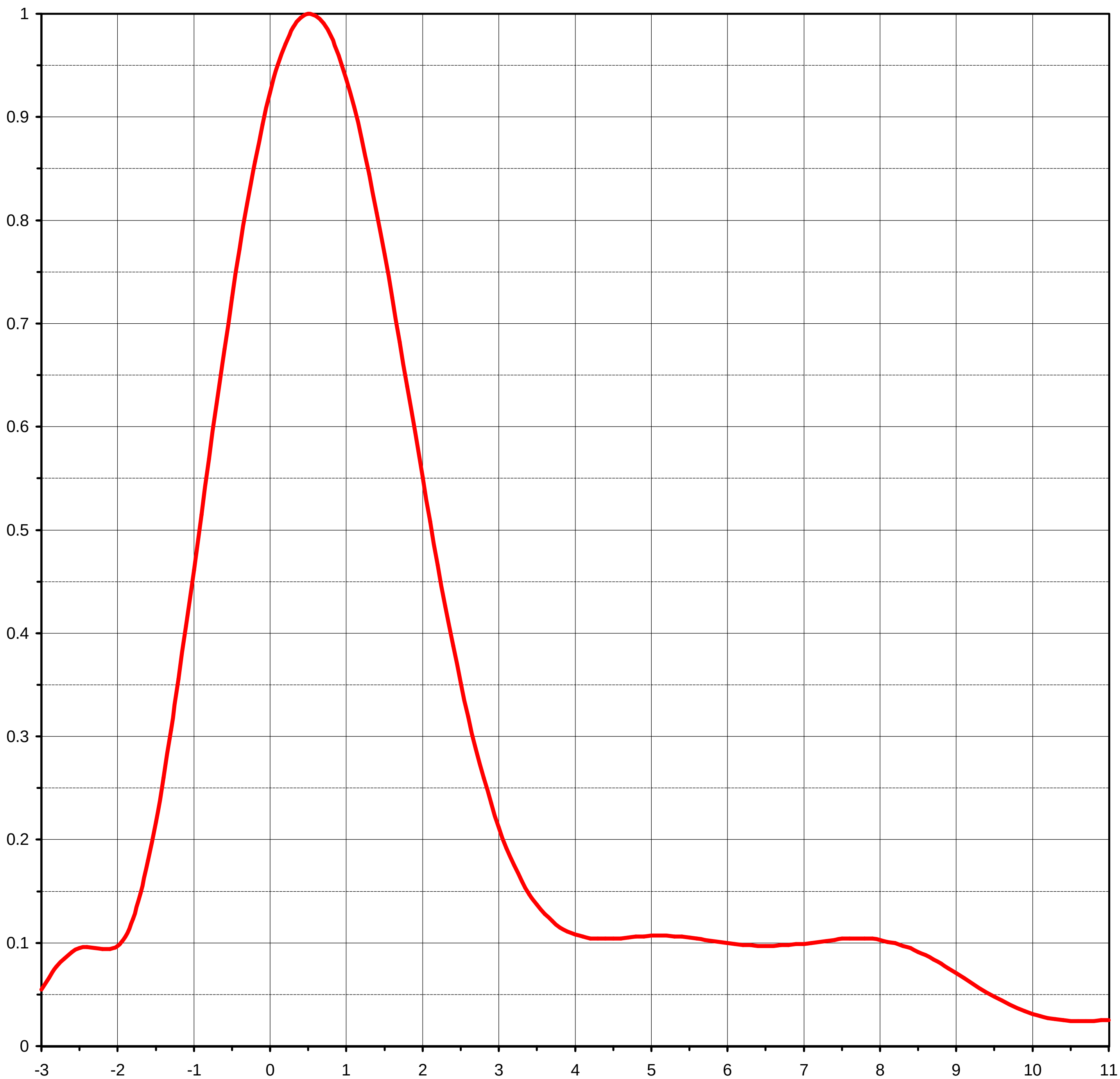
20100916

EXHIBIT 3

Proposal Number	**DCA-9628**		
Date	**3-Oct-01**		
Call Letters	**WEIQ-DT**	Channel	**41**
Location	**Mobile, AL**		
Customer	**APT**		
Antenna Type	**TFU-30GTH O4 DC**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**24.50**	**(13.89 dB)**	Beam Tilt	**0.50 deg**
RMS Gain at Horizontal	**20.90**	**(13.20 dB)**	Frequency	**635.00 MHz**
Calculated / Measured	**Calculated**		Drawing #	**30G245050**



Degrees Below Horizontal

EXHIBIT 4

Dielectric

Proposal Number	**DCA-9628**		
Date	**3-Oct-01**		
Call Letters	**WEIQ-DT**	Channel	**41**
Location	**Mobile, AL**		
Customer	**APT**		
Antenna Type	**TFU-30GTH O4 DC**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**24.50**	**(13.89 dB)**	Beam Tilt	**0.50 deg**
RMS Gain at Horizontal	**20.90**	**(13.20 dB)**	Frequency	**635.00 MHz**
Calculated / Measured	**Calculated**		Drawing #	**30G245050-90**

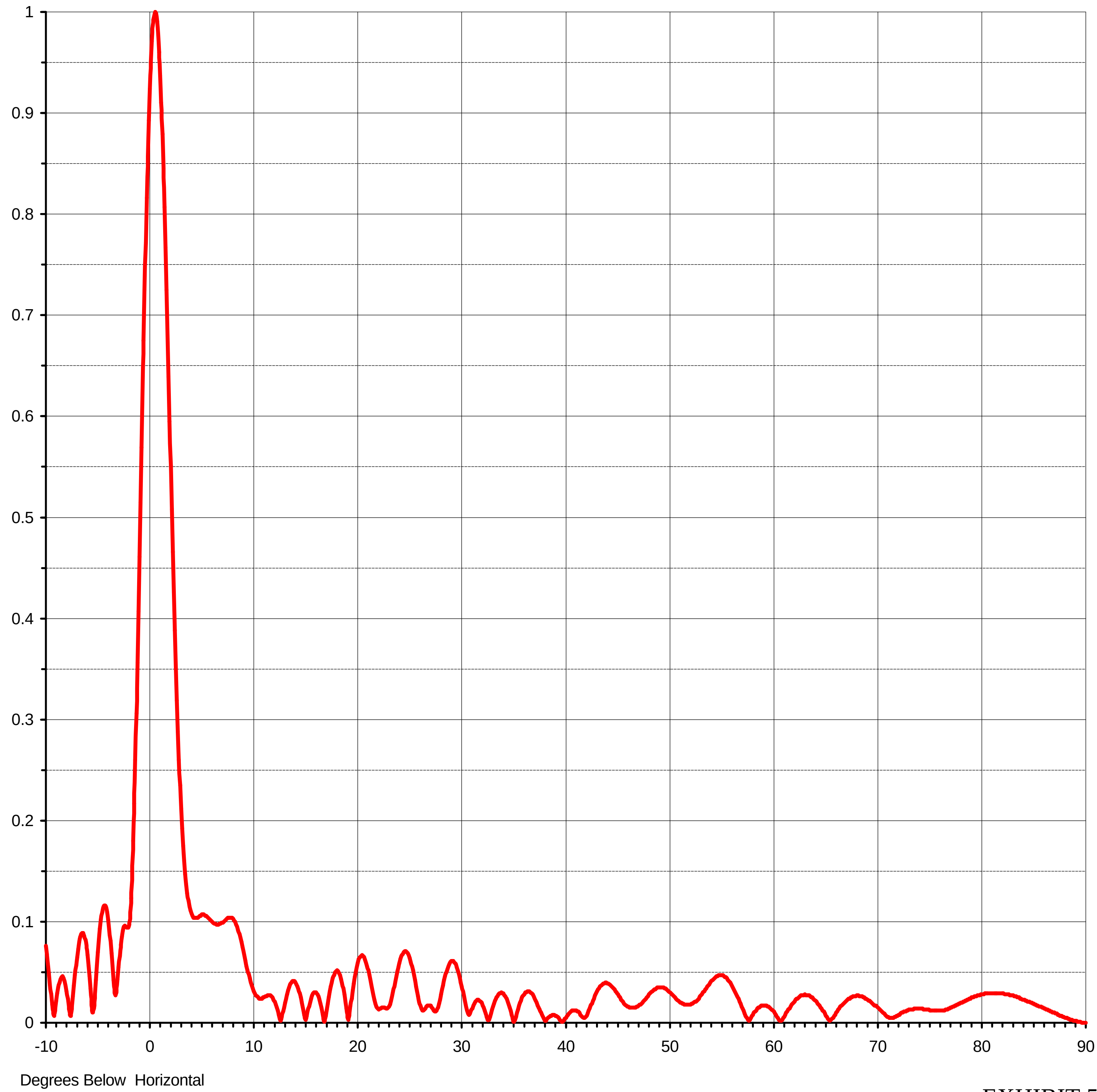


EXHIBIT 5

Dielectric

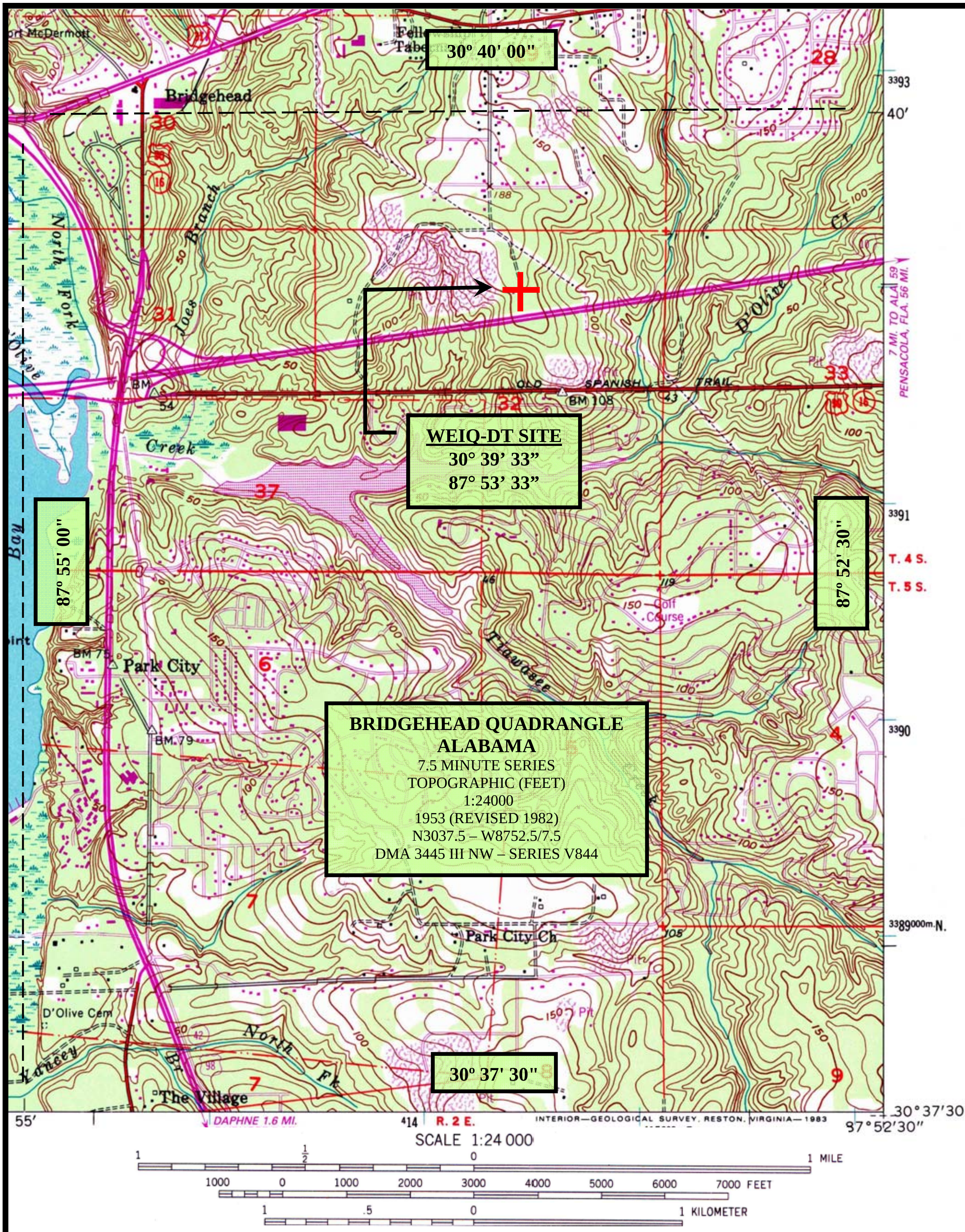
Proposal Number **DCA-9628**
Date **3-Oct-01**
Call Letters **WEIQ-DT** Channel **41**
Location **Mobile, AL**
Customer **APT**
Antenna Type **TFU-30GTH O4 DC**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **30G245050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.076	2.4	0.388	10.6	0.024	30.5	0.016	51.0	0.021	71.5	0.005
-9.5	0.028	2.6	0.319	10.8	0.024	31.0	0.012	51.5	0.018	72.0	0.008
-9.0	0.022	2.8	0.260	11.0	0.025	31.5	0.022	52.0	0.018	72.5	0.011
-8.5	0.045	3.0	0.212	11.5	0.027	32.0	0.020	52.5	0.021	73.0	0.013
-8.0	0.031	3.2	0.175	12.0	0.023	32.5	0.006	53.0	0.026	73.5	0.014
-7.5	0.016	3.4	0.147	12.5	0.008	33.0	0.013	53.5	0.033	74.0	0.014
-7.0	0.065	3.6	0.128	13.0	0.015	33.5	0.026	54.0	0.040	74.5	0.013
-6.5	0.089	3.8	0.115	13.5	0.035	34.0	0.029	54.5	0.045	75.0	0.012
-6.0	0.067	4.0	0.108	14.0	0.041	34.5	0.021	55.0	0.047	75.5	0.012
-5.5	0.010	4.2	0.104	14.5	0.029	35.0	0.005	55.5	0.045	76.0	0.012
-5.0	0.070	4.4	0.104	15.0	0.005	35.5	0.013	56.0	0.038	76.5	0.013
-4.5	0.114	4.6	0.104	15.5	0.020	36.0	0.027	56.5	0.028	77.0	0.015
-4.0	0.102	4.8	0.106	16.0	0.030	36.5	0.031	57.0	0.016	77.5	0.017
-3.5	0.042	5.0	0.107	16.5	0.019	37.0	0.026	57.5	0.005	78.0	0.020
-3.0	0.055	5.2	0.107	17.0	0.007	37.5	0.015	58.0	0.007	78.5	0.022
-2.8	0.077	5.4	0.106	17.5	0.036	38.0	0.004	58.5	0.014	79.0	0.025
-2.6	0.091	5.6	0.104	18.0	0.051	38.5	0.006	59.0	0.017	79.5	0.026
-2.4	0.096	5.8	0.102	18.5	0.043	39.0	0.008	59.5	0.016	80.0	0.028
-2.2	0.094	6.0	0.100	19.0	0.014	39.5	0.003	60.0	0.012	80.5	0.029
-2.0	0.097	6.2	0.098	19.5	0.024	40.0	0.004	60.5	0.005	81.0	0.029
-1.8	0.123	6.4	0.097	20.0	0.055	40.5	0.010	61.0	0.005	81.5	0.029
-1.6	0.180	6.6	0.097	20.5	0.067	41.0	0.012	61.5	0.013	82.0	0.029
-1.4	0.260	6.8	0.098	21.0	0.056	41.5	0.008	62.0	0.020	82.5	0.028
-1.2	0.356	7.0	0.099	21.5	0.032	42.0	0.006	62.5	0.025	83.0	0.027
-1.0	0.461	7.2	0.101	22.0	0.014	42.5	0.017	63.0	0.027	83.5	0.025
-0.8	0.569	7.4	0.103	22.5	0.015	43.0	0.029	63.5	0.027	84.0	0.023
-0.6	0.675	7.6	0.104	23.0	0.015	43.5	0.037	64.0	0.023	84.5	0.021
-0.4	0.772	7.8	0.104	23.5	0.031	44.0	0.040	64.5	0.015	85.0	0.019
-0.2	0.857	8.0	0.103	24.0	0.055	44.5	0.036	65.0	0.007	85.5	0.016
0.0	0.924	8.2	0.100	24.5	0.070	45.0	0.030	65.5	0.003	86.0	0.014
0.2	0.971	8.4	0.095	25.0	0.067	45.5	0.022	66.0	0.010	86.5	0.012
0.4	0.996	8.6	0.088	25.5	0.047	46.0	0.016	66.5	0.017	87.0	0.010
0.6	0.998	8.8	0.080	26.0	0.021	46.5	0.015	67.0	0.022	87.5	0.007
0.8	0.978	9.0	0.071	26.5	0.013	47.0	0.016	67.5	0.025	88.0	0.005
1.0	0.937	9.2	0.061	27.0	0.017	47.5	0.020	68.0	0.027	88.5	0.003
1.2	0.879	9.4	0.052	27.5	0.011	48.0	0.026	68.5	0.026	89.0	0.002
1.4	0.807	9.6	0.044	28.0	0.023	48.5	0.032	69.0	0.023	89.5	0.001
1.6	0.725	9.8	0.040	28.5	0.046	49.0	0.035	69.5	0.019	90.0	0.000
1.8	0.639	10.0	0.034	29.0	0.060	49.5	0.035	70.0	0.015		
2.0	0.551	10.2	0.029	29.5	0.058	50.0	0.031	70.5	0.010		
2.2	0.466	10.4	0.026	30.0	0.040	50.5	0.026	71.0	0.006		

EXHIBIT 6



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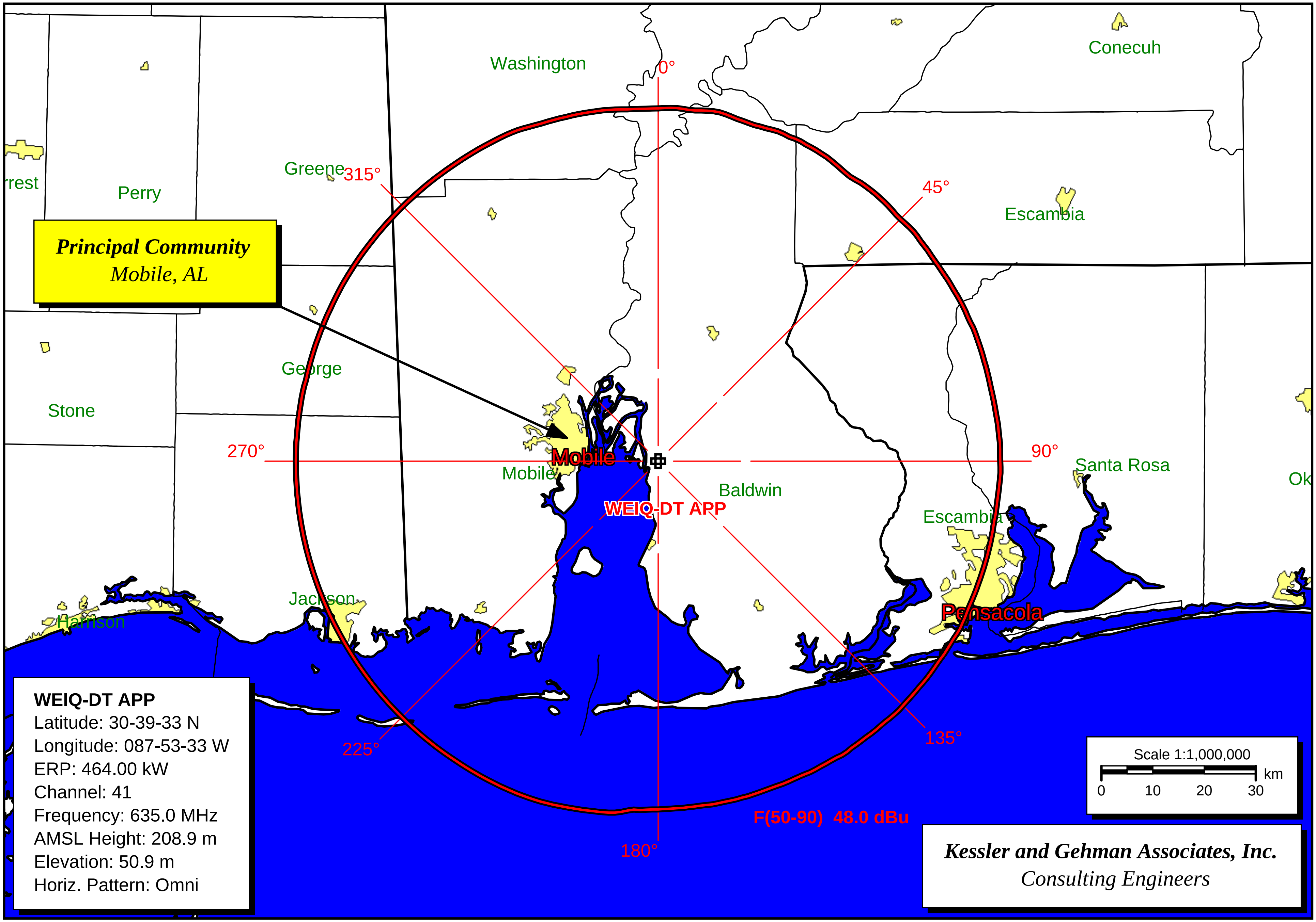
WEIQ-DT CHANNEL 41

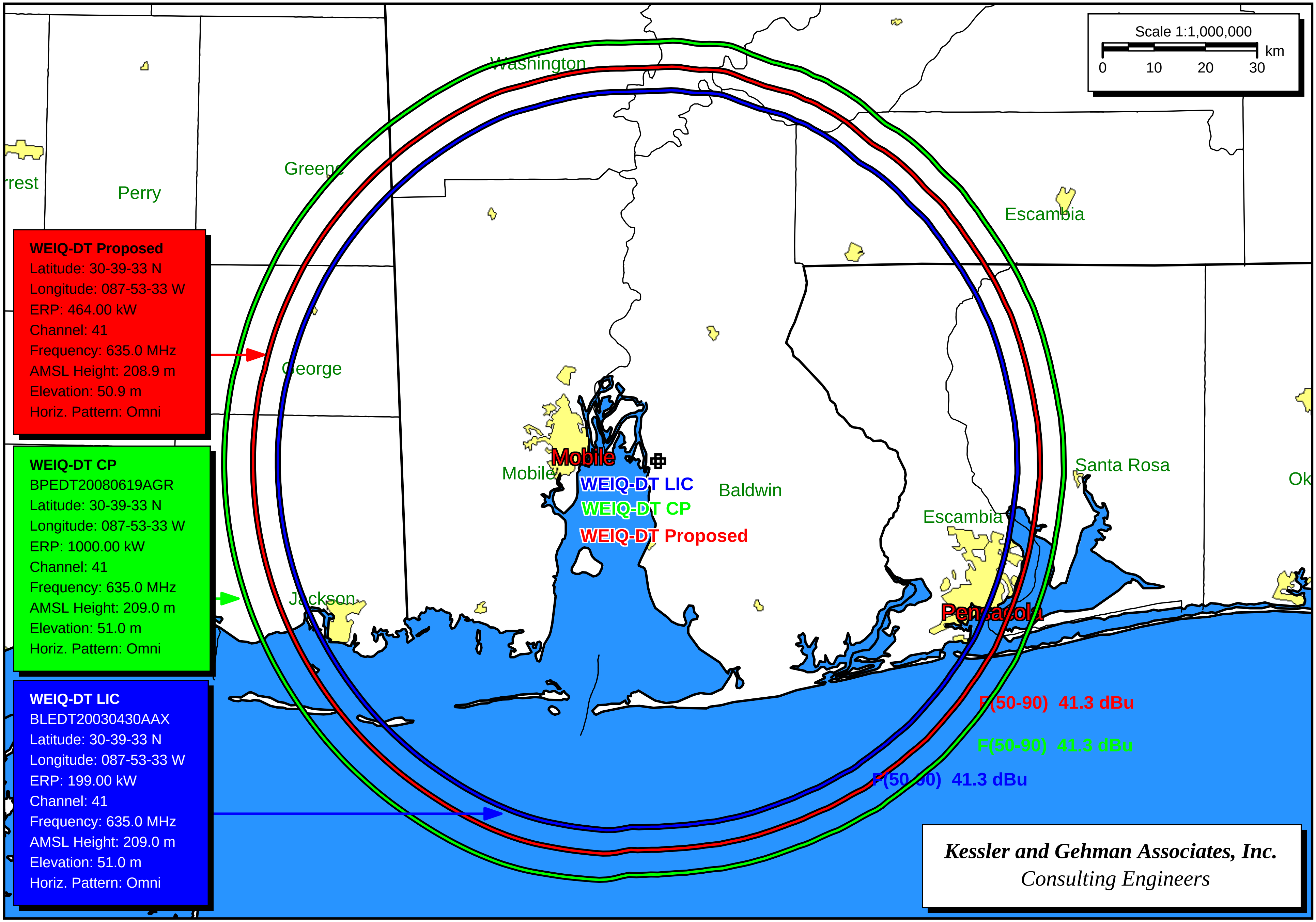
Mobile, Alabama

20100917 **EXHIBIT 7**



WEIQ-DT Channel 41 F(50,90) 48.0 dBuV/m Principal Community Contour

EXHIBIT 8



WEIQ-DT Channel 41 License (blue), CP (green) and Proposed (Red)

EXHIBIT 9