

ENGINEERING STATEMENT
MODIFICATION OF CONSTRUCTION PERMIT
(FCC FILE NO. BPCDT-19991029AIL)
ON BEHALF OF
NEXSTAR BROADCASTING, INC.
KAMR-DT, AMARILLO, TEXAS
CHANNEL 19 400 KW ERP 455.2 METERS HAAT

JANUARY 2007

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

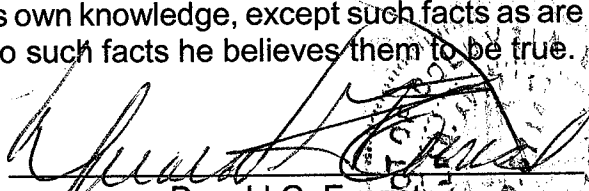
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

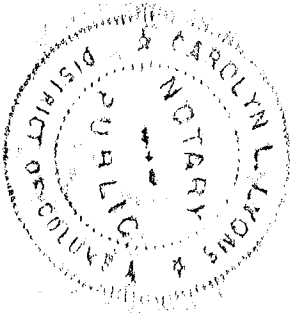
That his qualifications are a matter of record in the Federal Communications Commission;

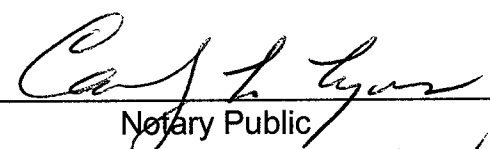
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.


Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 22nd day of January, 2007.




Notary Public

My Commission Expires: 2/28/2008

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

Martin R. Doczkat being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

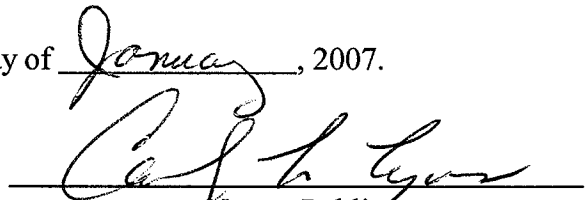
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



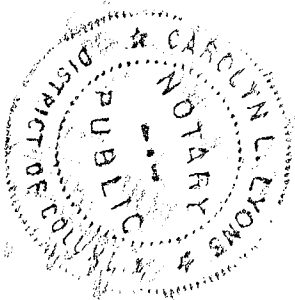
Martin R. Doczkat

Subscribed and sworn to before me this 22nd day of January, 2007.



Notary Public

My Commission Expires: 2/28/2008



Introduction

This engineering statement has been prepared on behalf of Nexstar Broadcasting, Inc. ("Nexstar"), licensee of TV station KAMR-TV, Amarillo, Texas, in support of its request for modification of its outstanding construction permit (FCC File No. BPCDT-19991029AIL) for digital television ("DTV") operation. At present, KAMR-TV operates on NTSC TV Channel 4 (66-72 MHz) with 100 kW effective radiated power ("ERP") and 433 meters antenna height above average terrain ("HAAT"). The current analog Channel 4 operation of KAMR-TV is with a non-directional TV antenna. Station KAMR-TV has been allotted Channel 19 (500-506 MHz) for its digital TV operation and been authorized to construct a facility (BPCDT-19991029AIL) with 1000 kW maximum ERP and 403 meters HAAT. KAMR-DT proposes to operate from the existing KCIT(TV) tower with 400 kW non-directional at an HAAT of 455.2 meters.

Antenna Site

The DTV antenna will be side-mounted on the existing KCIT(TV) tower (Exhibit E-1) at 444 meters above ground level. The KCIT(TV) tower site is 3.8 km away from the site authorized by the outstanding construction permit (FCC File No. BPCDT-19991029AIL) at a bearing of N 215° E.

The KAMR-DT antenna site will be located at Water Reclamation Plant Road and Interstate 87 (Dumas Highway), Amarillo, Texas. The KCIT(TV) antenna structure registration number is 1048587.

The geographic coordinates of the existing tower are as follows:

North Latitude: 35° 20' 33"

West Longitude: 101° 49' 21"

(NAD-27)

The following data shows the pertinent information concerning the proposed operation.

Antenna and Elevation Data

Antenna:	Dielectric	TUF-O4-16/64H-1-T
	Beam Tilt	0.75° electrical
	Directional Max. Power Gain	31.3 14.96 dB *See Exhibit E - 2
Transmission Line:	Dielectric, Type EHT, 8-3/16", 75 ohm or equivalent, length 472.4 m (1550 ft.)	

Power Data

Transmitter Power Output	17.1 kW	12.32 dBk
Transmission Line Efficiency/Loss	74.7%	1.26 dB
Combiner Efficiency/Loss	93.3%	0.3 dB
Input Power to Antenna	12.8 kW	11.06 dBk
Antenna Power Gain	31.3	14.96
Effective Radiated Power	400 kW	26.02 dBk

Elevation of the site above mean sea level:	1046.3 meters 3433 feet
Elevation of the top of existing supporting structure above ground including DTV antenna	456.9 meters 1499 feet
Elevation of the top of supporting structure above mean sea level including DTV antenna	1503.2 meters 4932 feet
Height of DTV antenna radiation center meters above ground	444.0 meters 1457 feet
Height of DTV antenna radiation center above mean sea level	1490.3 meters 4890 feet
Height of DTV antenna radiation center above average terrain	455.2 meters

Authorized Effective Radiated Power

The maximum ERP authorized by the outstanding construction permit for the DTV operation is 1000 kW at 403 meters HAAT. Station KAMR-DT is proposing to operate its DTV facility with a maximum ERP of 400 kW and 455.2 meters HAAT using a non-directional transmitting antenna. This power and height will ensure that it does not extend the predicted 41 dBu contour in any direction beyond that authorized by the construction permit.

The attached map (Exhibit E-3) shows the computed F(50,90) 48 dBu and 41 dBu contours predicted according to Section 73.625(b) of the Commission's rules based on the requested DTV facilities of 400 kW ERP and 455.2 meters HAAT.

Principal Community Coverage

In MM Docket No. 00-39, the Commission adopted rules to require DTV stations to place a stronger TV signal over the principal community.

The operation proposed by Station KAMR-DT places a predicted 48 dBu contour over Amarillo.

Topographic Data

The average elevation data along evenly spaced radials every 45 degrees in azimuth from 3.2 to 16.1 kilometers are based on the NGDC 3-second computerized terrain database.

Contour Data

Utilizing the formula in Section 73.625(b)(2) for the effective heights shown on the attached tabulation, the depression angle A_h , for each azimuth has been calculated. The maximum radiation value has been used to calculate ERP where the vertical radiation pattern at these angles is greater than 90% of the maximum.

Table I provides the distances along each radial spaced every 45 degrees in azimuth to the predicted F(50,90) 48 and 41 dBu contours, the average elevations, and the effective antenna heights.

The distances along each radial to the limits of F(50,90) 48 dBu and 41 dBu contours were determined as specified in Section 73.625(b) by reference to the propagation data for Channels 14-69, as published by the Commission in Figures 10b and 10c, Section 73.699 of its rules.

Interference Analysis

An analysis of predicted interference caused by the proposed KAMR -DT service has been performed even as the proposed F(50,90) 41 dBu contour is not predicted to extend in any direction beyond that authorized by the F(50,90) 41 dBu contour of the outstanding construction permit (see Exhibit E-4).

The interference analysis used the FCC's FORTRAN-77 code which was modified only to the extent necessary (primarily input/output handling) for the program to run on a Windows 98/Intel platform. Comparison of service/interference areas and populations indicates that this model closely matches the FCC's evaluation program. Best efforts have been made to use data and calculations identical to the FCC's program. Any slight differences are attributable to compiler, operating system and/or processor characteristics. The effect of any variance in calculated population values versus the FCC's program is minimized when differencing a given model's results, such as calculating new interference as total interference less baseline interference. Any variance effect is further reduced when using ratios of calculated population values such as measuring the incremental population affected as a percent of the total population served. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 4 km² using 3-second terrain data sampled approximately every 1.0 km at one degree azimuth intervals with 2000 Census centroids.

Stations were selected from the FCC's Consolidated Database System ("CDBS") according to the FCC Public Notice dated August 10, 1998 and entitled, "Additional Application

Processing Guidelines for Digital Television”, which outlines the station selection criteria “culling distances” for considering potential interference scenarios.

Table II provides a summary of the Longley-Rice interference analysis and demonstrates that no new interference is caused by the proposed operation of KAMR-DT to any potentially affected facility above the outstanding construction permit.

Other Stations

There are three FM and nine TV broadcast stations located within 100 meters of the proposed site. No objectionable interference problems are anticipated, however, if any problems occur, the applicant will take the necessary steps to resolve them. There are no AM stations within 3.22 km of the proposed site.

Environment Statement

There are three FM stations and nine other TV stations from the tower. The following broadcast stations are authorized to operate from the tower: KCIT-DT, KCIT(TV), KACV-TV, KEAT-LP, KEYU-DT, KCPN-LD, KEYU-LP, KAMT-LP, K59HG (TX), KACV-FM, KMXJ-FM, and KATP(FM). An assessment of the radio frequency field (“RFF”) level has been performed.

Proposed DTV Station KAMR -DT

Channel 19	Freq: 500 - 506 MHz Range
$S = \frac{33.4 (F^2) ERP}{R^2}$	ERP = 400 kW (Horizontal only)
	R = 442 meters (antenna height above ground - 2 meters)
	F = 0.1

$$S = < 0.7 \mu\text{W}/\text{cm}^2$$

Therefore KAMR-DT contributes less than $0.7 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground. The limit for an uncontrolled environment (general population) for this frequency is $335.33 \mu\text{W}/\text{cm}^2$.

KAMR-DT contributes less than 0.1% RFF Level for an uncontrolled environment (general population) two meters above the ground.

DTV Station KCIT-DT (Construction Permit)

Channel 15 Freq: 476 - 482 MHz Range

$$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$$

$$\begin{array}{ll} \text{ERP} &= 925 \text{ kW (Horizontal only)} \\ R &= 443.7 \text{ meters (antenna height above ground - 2 meters)} \\ F &= 0.1 \end{array}$$

$$S = < 1.6 \mu\text{W}/\text{cm}^2$$

Therefore KCIT-DT contributes less than $1.6 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.
The limit for an uncontrolled environment (general population) for this frequency is $319.33 \mu\text{W}/\text{cm}^2$.

KCIT-DT contributes less than 0.5% RFF Level for an uncontrolled environment (general population) two meters above the ground.

TV Station KCIT(TV)

Channel 14 Freq: 470-476 MHz Range

$$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$$

$$\begin{array}{ll} \text{ERP} &= 1290 \text{ kW (Horizontal only)} \\ R &= 445.9 \text{ meters (antenna height above ground - 2 meters)} \\ F &= 0.2 \end{array}$$

$$S = < 4.4 \mu\text{W}/\text{cm}^2$$

Therefore KCIT-DT contributes less than $4.4 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $315.33 \mu\text{W}/\text{cm}^2$.

KCIT-DT contributes less than 1.4% RFF Level for an uncontrolled environment (general population) two meters above the ground.

TV Station KACV-TV

Channel 2 Freq: 54-60 MHz Range

$$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$$

$$\begin{array}{ll} \text{ERP} &= 100 \text{ kW (Horizontal only)} \\ R &= 384.9 \text{ meters (antenna height above ground - 2 meters)} \\ F &= 0.2 \end{array}$$

$$S = < 0.5 \mu\text{W}/\text{cm}^2$$

Therefore KACV-TV contributes less than $0.5 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $200 \mu\text{W}/\text{cm}^2$.

KACV-TV contributes less than 0.3% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Low-Power TV Station KEAT-LP (Construction Permit)

Channel 22 Freq: 518-524 MHz Range

$$S = \frac{33.4 (F^2) ERP}{R^2} \quad \begin{array}{l} ERP = 150 \text{ kW (Horizontal only)} \\ R = 292.1 \text{ meters (antenna height above ground - 2 meters)} \\ F = 0.2 \end{array}$$

$$S = < 1.2 \mu\text{W}/\text{cm}^2$$

Therefore KEAT-LP contributes less than 1.2 $\mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is 347.33 $\mu\text{W}/\text{cm}^2$.

KEAT-LP contributes less than 0.4% RFF Level for an uncontrolled environment (general population) two meters above the ground.

DTV Station KEYU-DT

Channel 31 Freq: 572-578 MHz Range

$$S = \frac{33.4 (F^2) ERP}{R^2} \quad \begin{array}{l} ERP = 700 \text{ kW (Horizontal only)} \\ R = 292.1 \text{ meters (antenna height above ground - 2 meters)} \\ F = 0.1 \end{array}$$

$$S = < 2.8 \mu\text{W}/\text{cm}^2$$

Therefore KEYU-DT contributes less than 2.8 $\mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is 383.33 $\mu\text{W}/\text{cm}^2$.

KEYU-DT contributes less than 0.8% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Digital Low-Power TV Station KCPN-LD (Construction Permit)

Channel 33 Freq: 584-590 MHz Range

$$S = \frac{33.4 (F^2) ERP}{R^2} \quad \begin{array}{l} ERP = 0.248 \text{ kW (Horizontal only)} \\ R = 164 \text{ meters (antenna height above ground - 2 meters)} \\ F = 0.2 \end{array}$$

$$S = < 0.1 \mu\text{W}/\text{cm}^2$$

Therefore KCPN-LP contributes less than $0.1 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $391.33 \mu\text{W}/\text{cm}^2$.

KCPN-LD contributes less than 0.1% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Low-Power TV Station KEYU-LP

Channel 41	Freq: 632-638 Range
$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$	ERP = 123 kW (Horiz and Vert)
	R = 292.1 meters (antenna height above ground - 2 meters)
	F = 0.2 (assumed)

$S = < 1.0 \mu\text{W}/\text{cm}^2$

Therefore KEYU-LP contributes less than $1.0 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $423.33 \mu\text{W}/\text{cm}^2$.

KEYU-LP contributes less than 0.3% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Low-Power TV Station KAMT-LP

Channel 50	Freq: 686-692 MHz Range
$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$	ERP = 150 kW (Horizontal only)
	R = 292.1 meters (antenna height above ground - 2 meters)
	F = 0.2

$S = < 1.2 \mu\text{W}/\text{cm}^2$

Therefore KAMT-LP contributes less than $1.2 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $459.33 \mu\text{W}/\text{cm}^2$.

KAMT-LP contributes less than 0.3% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Television Translator Station K59HG (TX)

Channel 59	Freq: 740-746 MHz Range
$S = \frac{33.4 (F^2) \text{ ERP}}{R^2}$	ERP = 25.8 kW (Horizontal only)
	R = 292.1 meters (antenna height above ground - 2 meters)
	F = 0.2

$$S = < 0.2 \mu\text{W}/\text{cm}^2$$

Therefore K59HG (TX) contributes less than $0.2 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) for this frequency is $495.33 \mu\text{W}/\text{cm}^2$.

K59HG (TX) contributes less than 0.1% RFF Level for an uncontrolled environment (general population) two meters above the ground.

FM Station KACV-FM

Channel 210C	Freq: 89.9 MHz Range
$S = \frac{33.4 (F^2) \text{ERP}}{R^2}$	ERP = 100 kW (Horiz and Vert)
	R = 335.9 meters (antenna height above ground - 2 meters)
	F = 0.3

$$S = < 5.33 \mu\text{W}/\text{cm}^2$$

Therefore KACV-FM contributes less than $5.33 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) is $200 \mu\text{W}/\text{cm}^2$.

KACV-FM contributes less than 2.66% RF for an uncontrolled environment (general population) two meters above the ground.

FM Station KMXJ-FM

Channel 231C	Freq: 94.1 MHz Range
$S = \frac{33.4 (F^2) \text{ERP}}{R^2}$	ERP = 100 kW (Horiz and Vert)
	R = 315.9 meters (antenna height above ground - 2 meters)
	F = 0.3

$$S = < 6.024 \mu\text{W}/\text{cm}^2$$

Therefore KMXJ-FM contributes less than $6.024 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) is $200 \mu\text{W}/\text{cm}^2$.

KMXJ-FM contributes less than 3.01% RFF Level for an uncontrolled environment (general population) two meters above the ground.

FM Station KATP-FM

Channel 270C1	Freq: 101.9 MHz Range
$S = \frac{33.4 (F^2) \text{ERP}}{R^2}$	ERP = 100 kW (Horiz and Vert)
	R = 269.9 meters (antenna height above ground - 2 meters)
	F = 0.3

$$S = < 8.25 \mu\text{W}/\text{cm}^2$$

Therefore KATP-FM contributes less than $8.25 \mu\text{W}/\text{cm}^2$ at 2 meters above the ground.

The limit for an uncontrolled environment (general population) is $200 \mu\text{W}/\text{cm}^2$.

KATP-FM contributes less than 4.13% RFF Level for an uncontrolled environment (general population) two meters above the ground.

Total RFF% = $0.1\% + 0.5\% + 1.4\% + 0.3\% + 0.4\% + 0.8\% + 0.1\% + 0.3\% + 2.66\% + 3.01\% + 4.13\% = 13.7\%$

Therefore the total RF percentage two meters above the ground at the highest RF measurement point will be less than 13.7 % of the limit for an uncontrolled environment, when KAMR-DT is operational. Based on this analysis, no radiation hazard signs will be necessary.

The permittee indicates that all authorized personnel climbing the tower will be alerted to the potential zones of high field levels on the tower.

Environmental Assessment

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the licensee indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.

- (a)(7) The installation of the DTV facilities on an existing guyed tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

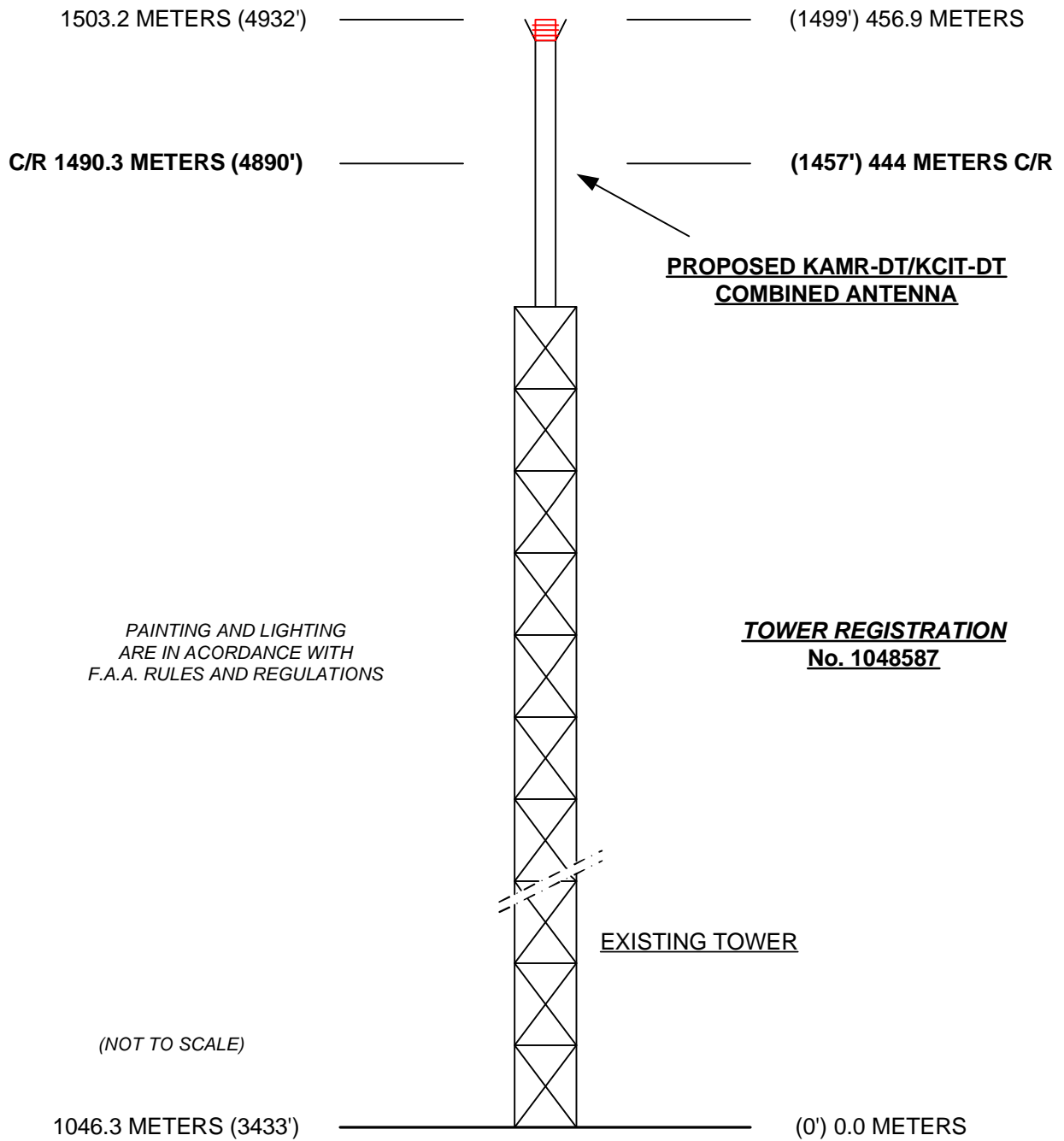


EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
KAMR-DT, AMARILLO, TEXAS
JANUARY 2007

Cohen, Dippell and Everist, P.C.

TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
KAMR-DT, AMARILLO, TEXAS
CHANNEL 19 400 KW ERP 455.2 METERS HAAT
JANUARY 2007

Radial Bearing N ° E, T	Average*	Effective Height meters	Depression Angle	ERP At Radio Horizon kW	Distance to Contour F(50,90)	
	Elevation 3.2 to 16.1 km meters				48 dBu City Grade km	41 dBu Noise-Limited km
0	961.3	529.0	0.637	400	93.7	107.9
45	1014.6	475.7	0.604	400	89.8	103.6
90	1068.0	422.3	0.569	400	86.8	99.2
135	1081.2	409.1	0.560	400	86.2	98.2
180	1081.6	408.7	0.560	400	86.1	98.2
225	1051.5	438.8	0.580	400	87.7	100.5
270	1027.6	462.7	0.596	400	89.0	102.5
315	994.8	495.5	0.617	400	91.1	105.3
Average	1035.1	455.2				

*Based on data from FCC 3-second data base

DTV Channel 19 (500-506 MHz)
Average Elevation 3.2 to 16.1 km 1035.1 meters AMSL
Center of Radiation 1490.3 meters AMSL
Antenna Height Above Average Terrain 455.2 meters
Effective Radiated Power 400 kW (26.02 dBk) Max.

North Latitude: 35° 20' 33"
West Longitude: 101° 49' 21"

(NAD-27)

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II
LONGLEY-RICE ANALYSIS
ABOVE THE OUTSTANDING CONSTRUCTION PERMIT
(FCC FILE NO. BPCDT-19991029AIL)
FOR THE PROPOSED OPERATION OF
KAMR-DT, AMARILLO, TEXAS
CHANNEL 19 400 KW ERP ND 455.2 METERS HAAT
JANUARY 2007

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>Result</u>
18	KPTF(TV)	FARWELL TX	161.2	LIC	BLCT-20010405ADB	no interference
19	KOCT-DT	CARLSBAD NM	358.4	CP	BPCDT-19991101AEP	-0.09%
19	KOCT-DT	CARLSBAD NM	358.4	ALLOT		-0.62%
20	KVIH-DT	CLOVIS NM	184.5	CP	BPCDT-19991029ACF	no interference
20	KVIH-DT	CLOVIS NM	184.4	ALLOT		no interference
26	K26CD	CLOVIS NM	161.4	LIC	BLTT-19880725IN	0.00%

Cohen, Dippell and Everist, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KAMR-DT, AMARILLO, TEXAS

Proposal #: **C-00495**Antenna Type: **TUF-O4-16/64H-1-T**Channel: **19 DTV**Call Letters: **KAMR-DT**Location: **Amarillo, TX**

Electrical Specifications		Value		Remarks	
		Ratio	dB		
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	31.3	14.96		
	Vpol				
RMS Gain at Horizontal over Halfwave Dipole	Hpol	13.3	11.24		
	Vpol				
Peak Directional Gain over Halfwave Dipole	Hpol				
	Vpol				
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol				
	Vpol				
Circularity		+/- 2.0 dB			
Axial Ratio		dB			
Beam Tilt		0.75 deg			
Antenna Input: T/L		7-3/16 in	75.0 ohm	Type: EIA/DCA EHT	
Maximum Antenna Input VSWR		Channel 1.10 : 1		Notes: 5-10 psi dry air or Nitrogen Required	
Patterns	Azimuth	TUF-O4-5630			
	Elevation	16U313080	16U313080-90		
Mechanical Specifications		Metric	English		
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F.					

NOTE:

Prepared By :

EHM

Approved By :

AJS

Original Date : 13-Jul-06



Proposal Number	C-00495	
Date	13-Jul-06	
Call Letters	KAMR-DT	Channel 19
Location	Amarillo, TX	
Customer		
Antenna Type	TUF-O4-16/64H-1-T	

SYSTEM SUMMARY

Antenna:

Type:	TUF-O4-16/64H-1-T	ERP:	1000 kW	H Pol	(30.00 dBk)
Channel:	19	RMS Gain*:	31.3		(14.96 dB)
Location:	Amarillo, TX	Input Power:	31.9 kW		(15.04 dBk)

Transmission Line:

Type:	EHT	Attenuation:	1.26 dB
Size:	8-3/16 in	Efficiency:	74.7%
Impedance:	75 ohm		
Length:	1,550 ft		472.4 m

Combiner:	DCA	Attenuation:	0.30 dB
		Efficiency:	93.3%

Combiner Input:

Power Required: **45.8 kW (16.61 dBk)**

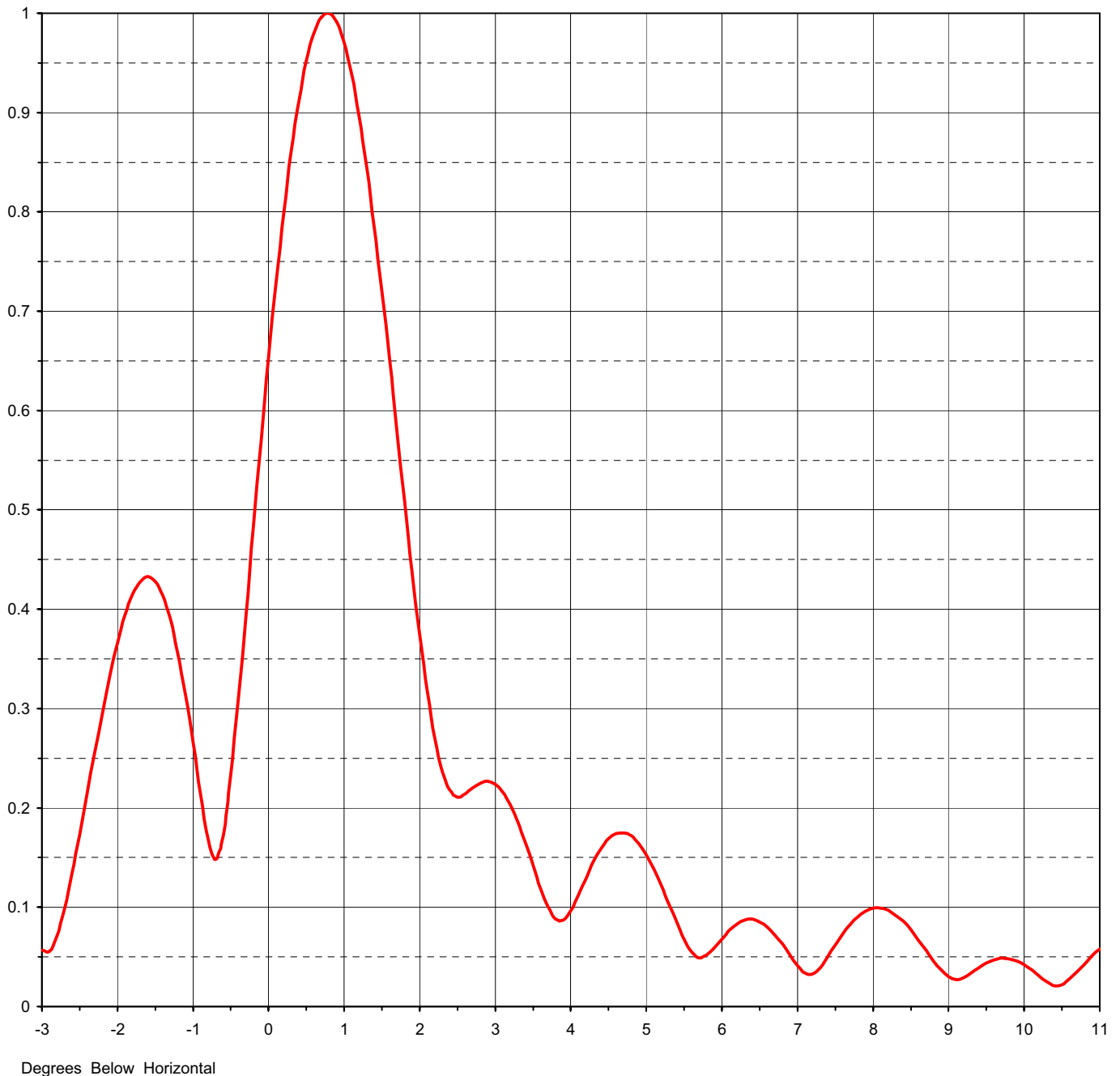
* Gain is with respect to half wave dipole.



Proposal Number	C-00495	
Date	13-Jul-06	
Call Letters	KAMR-DT	Channel 19
Location	Amarillo, TX	
Customer		
Antenna Type	TUF-O4-16/64H-1-T	

ELEVATION PATTERN

RMS Gain at Main Lobe	31.30 (14.96 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	13.30 (11.24 dB)	Frequency	503.00 MHz
Calculated / Measured	Calculated	Drawing #	16U313080

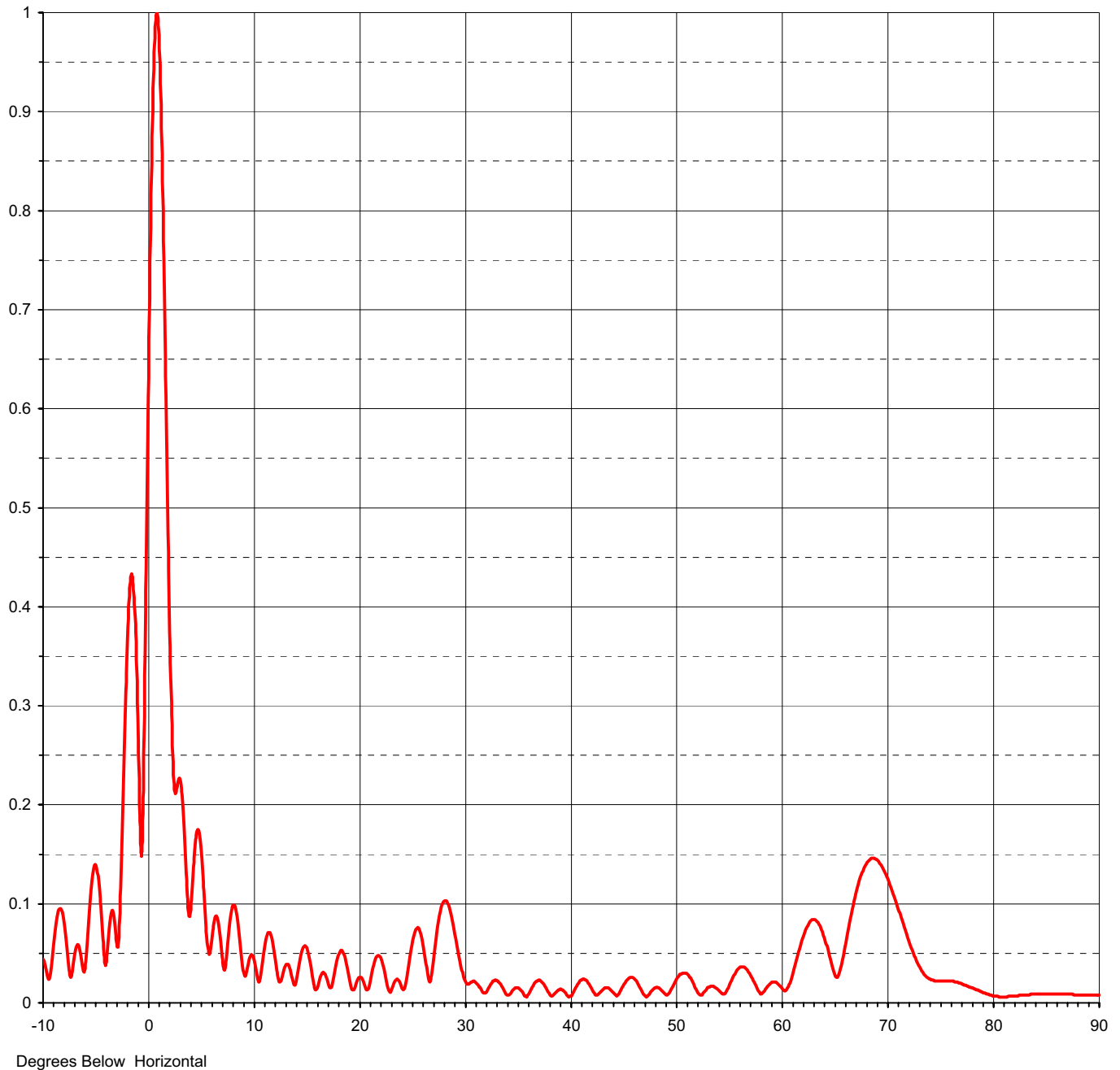




Proposal Number	C-00495	
Date	13-Jul-06	
Call Letters	KAMR-DT	Channel 19
Location	Amarillo, TX	
Customer		
Antenna Type	TUF-O4-16/64H-1-T	

ELEVATION PATTERN

RMS Gain at Main Lobe	31.30 (14.96 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	13.30 (11.24 dB)	Frequency	503.00 MHz
Calculated / Measured	Calculated	Drawing #	16U313080-90



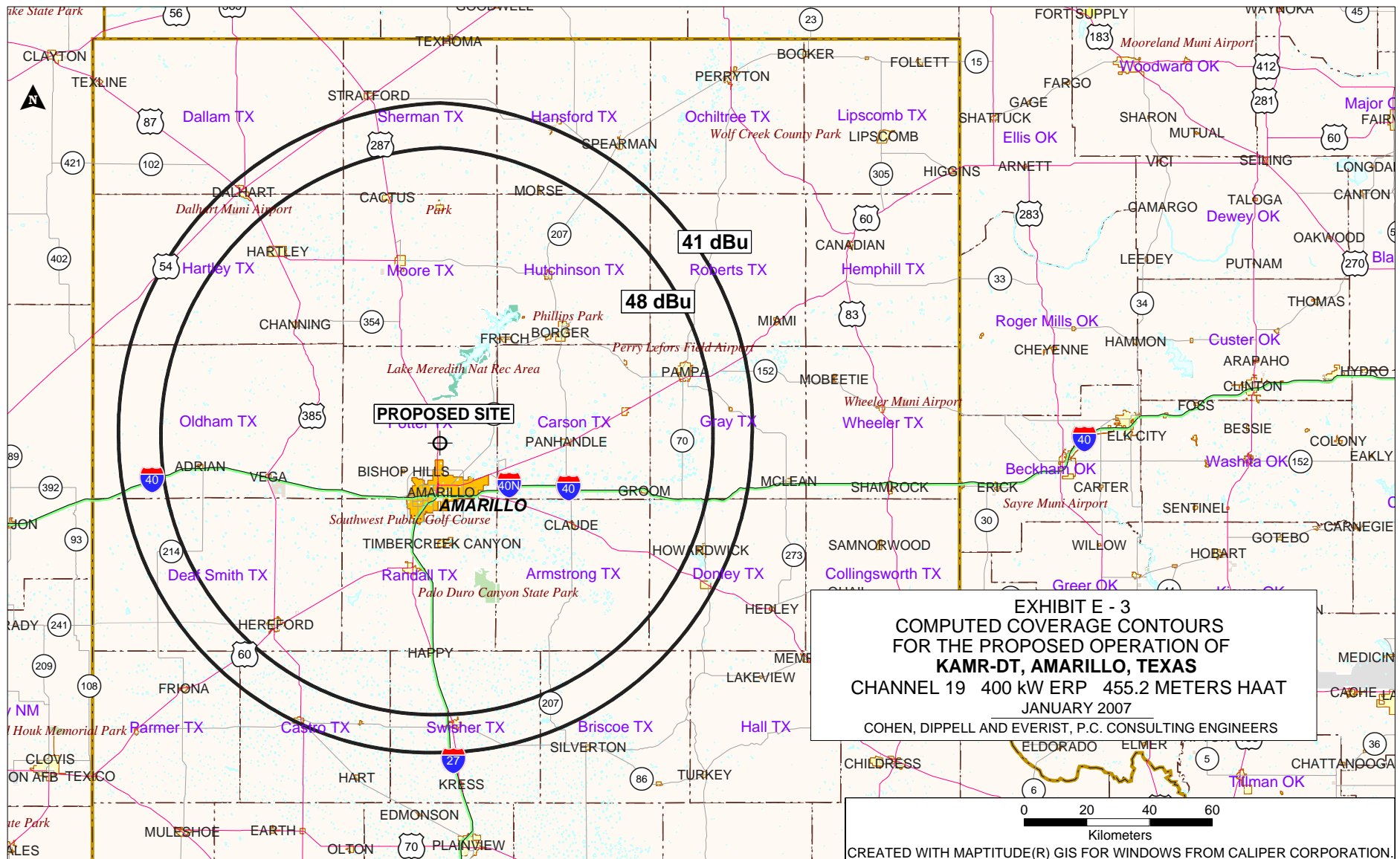


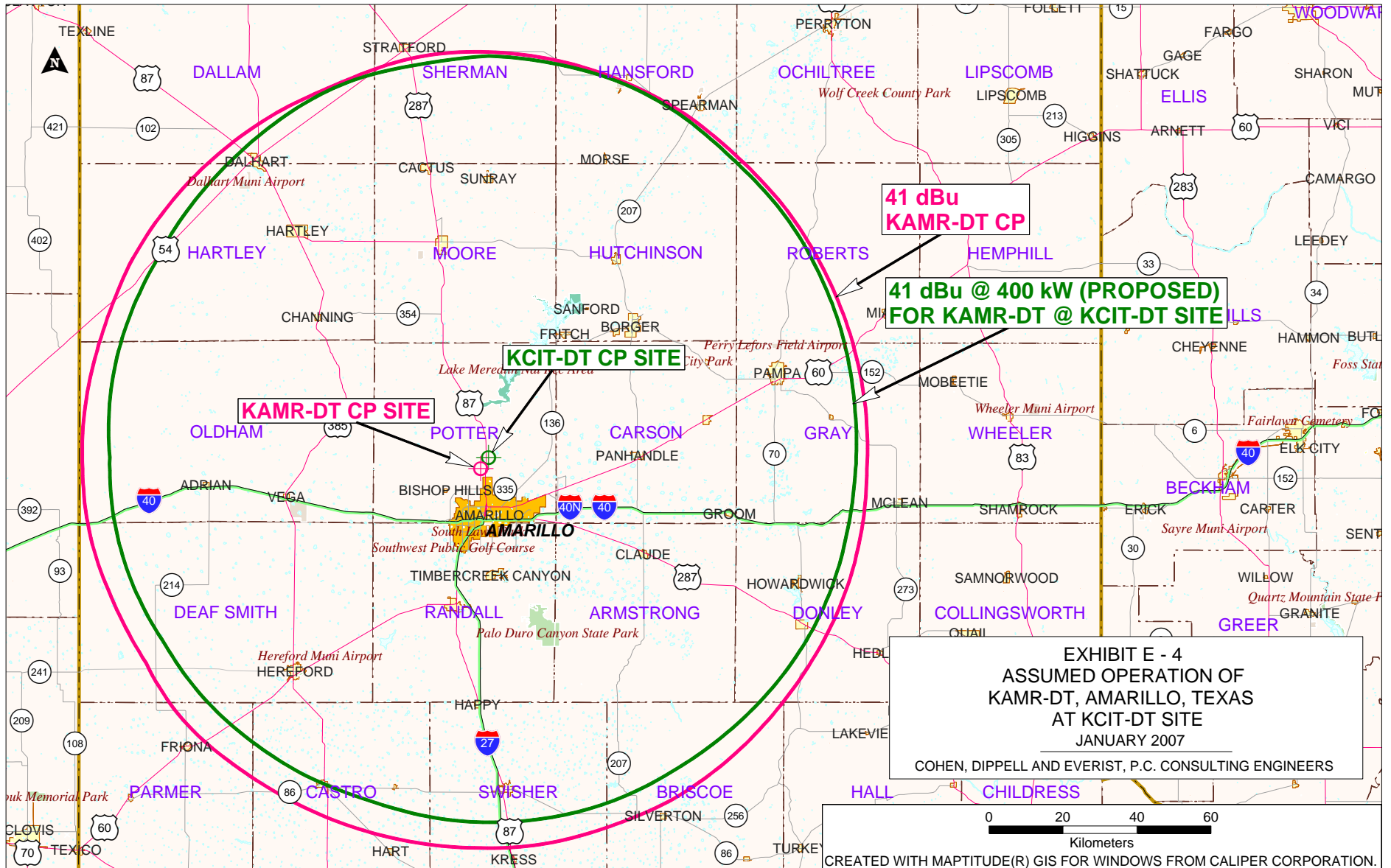
Proposal Number **C-00495**
 Date **13-Jul-06**
 Call Letters **KAMR-DT** Channel **19**
 Location **Amarillo, TX**
 Customer
 Antenna Type **TUF-O4-16/64H-1-T**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **16U313080-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.044	2.4	0.218	10.6	0.022	30.5	0.020	51.0	0.030	71.5	0.077
-9.5	0.024	2.6	0.214	10.8	0.035	31.0	0.021	51.5	0.023	72.0	0.061
-9.0	0.058	2.8	0.225	11.0	0.051	31.5	0.015	52.0	0.012	72.5	0.047
-8.5	0.094	3.0	0.224	11.5	0.071	32.0	0.010	52.5	0.008	73.0	0.036
-8.0	0.079	3.2	0.203	12.0	0.051	32.5	0.019	53.0	0.015	73.5	0.028
-7.5	0.029	3.4	0.165	12.5	0.021	33.0	0.023	53.5	0.017	74.0	0.024
-7.0	0.050	3.6	0.119	13.0	0.037	33.5	0.017	54.0	0.013	74.5	0.022
-6.5	0.052	3.8	0.088	13.5	0.033	34.0	0.008	54.5	0.009	75.0	0.022
-6.0	0.037	4.0	0.097	14.0	0.019	34.5	0.012	55.0	0.016	75.5	0.022
-5.5	0.107	4.2	0.129	14.5	0.048	35.0	0.015	55.5	0.028	76.0	0.022
-5.0	0.139	4.4	0.159	15.0	0.057	35.5	0.011	56.0	0.035	76.5	0.021
-4.5	0.089	4.6	0.174	15.5	0.035	36.0	0.008	56.5	0.036	77.0	0.019
-4.0	0.044	4.8	0.172	16.0	0.014	36.5	0.017	57.0	0.030	77.5	0.017
-3.5	0.093	5.0	0.153	16.5	0.030	37.0	0.023	57.5	0.019	78.0	0.015
-3.0	0.057	5.2	0.122	17.0	0.023	37.5	0.019	58.0	0.009	78.5	0.013
-2.8	0.071	5.4	0.085	17.5	0.020	38.0	0.010	58.5	0.014	79.0	0.010
-2.6	0.134	5.6	0.055	18.0	0.046	38.5	0.009	59.0	0.020	79.5	0.009
-2.4	0.214	5.8	0.052	18.5	0.051	39.0	0.013	59.5	0.021	80.0	0.007
-2.2	0.296	6.0	0.068	19.0	0.031	39.5	0.011	60.0	0.016	80.5	0.006
-2.0	0.366	6.2	0.083	19.5	0.013	40.0	0.007	60.5	0.013	81.0	0.006
-1.8	0.415	6.4	0.088	20.0	0.026	40.5	0.015	61.0	0.027	81.5	0.007
-1.6	0.433	6.6	0.080	20.5	0.019	41.0	0.023	61.5	0.047	82.0	0.007
-1.4	0.414	6.8	0.063	21.0	0.018	41.5	0.023	62.0	0.065	82.5	0.008
-1.2	0.356	7.0	0.041	21.5	0.042	42.0	0.015	62.5	0.078	83.0	0.008
-1.0	0.265	7.2	0.033	22.0	0.047	42.5	0.008	63.0	0.084	83.5	0.009
-0.8	0.168	7.4	0.050	22.5	0.029	43.0	0.012	63.5	0.081	84.0	0.009
-0.6	0.172	7.6	0.073	23.0	0.011	43.5	0.015	64.0	0.068	84.5	0.009
-0.4	0.310	7.8	0.090	23.5	0.023	44.0	0.011	64.5	0.045	85.0	0.009
-0.2	0.483	8.0	0.099	24.0	0.017	44.5	0.008	65.0	0.027	85.5	0.009
0.0	0.652	8.2	0.097	24.5	0.023	45.0	0.017	65.5	0.035	86.0	0.009
0.2	0.800	8.4	0.086	25.0	0.057	45.5	0.024	66.0	0.060	86.5	0.009
0.4	0.912	8.6	0.067	25.5	0.075	46.0	0.025	66.5	0.088	87.0	0.009
0.6	0.980	8.8	0.046	26.0	0.064	46.5	0.018	67.0	0.112	87.5	0.009
0.8	1.000	9.0	0.030	26.5	0.029	47.0	0.008	67.5	0.130	88.0	0.008
1.0	0.971	9.2	0.029	27.0	0.039	47.5	0.009	68.0	0.142	88.5	0.008
1.2	0.896	9.4	0.039	27.5	0.081	48.0	0.015	68.5	0.146	89.0	0.008
1.4	0.785	9.6	0.047	28.0	0.102	48.5	0.014	69.0	0.144	89.5	0.008
1.6	0.651	9.8	0.049	28.5	0.099	49.0	0.009	69.5	0.136	90.0	0.008
1.8	0.508	10.0	0.046	29.0	0.075	49.5	0.012	70.0	0.125		
2.0	0.374	10.2	0.037	29.5	0.046	50.0	0.022	70.5	0.110		
2.2	0.270	10.4	0.025	30.0	0.023	50.5	0.029	71.0	0.094		





SECTION III-D - DTV Engineering

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

- (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☐ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.

- ☐ Yes ☐ No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☐ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☐ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☐ Yes ☐ No

SECTION III-D DTV Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV _____ Analog TV, if any _____
2. Zone: ☐ I ☐ II ☐ III
3. Antenna Location Coordinates: (NAD 27)
- _____ ° _____ ' _____ " ☐ N ☐ S Latitude
_____ ° _____ ' _____ " ☐ E ☐ W Longitude
4. Antenna Structure Registration Number: _____
- ☐ Not applicable ☐ FAA Notification Filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level: _____ meters
6. Overall Tower Height Above Ground Level: _____ meters
7. Height of Radiation Center Above Ground Level: _____ meters
8. Height of Radiation Center Above Average Terrain: _____ meters
9. Maximum Effective Radiated Power (average power): _____ kW
10. Antenna Specifications:
- a.

Manufacturer	Model
--------------	-------
- b. Electrical Beam Tilt: _____ degrees ☐ Not Applicable
- c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☐ Not Applicable
- Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). Exhibit No.
- d. Polarization: ☐ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

Rotation: _____ ° ☐ No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") ☐ Yes ☐ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

- a. If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.

KAMR-DT

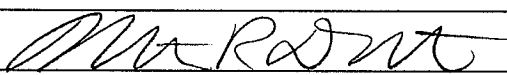
I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing	Typed or Printed Title of Person Signing
Signature	Date

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 PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Martin R. Doczkat	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 	Date January 22, 2007	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100		
City Washington	State or Country (if foreign address) DC	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111	E-Mail Address (if available) cde@attglobal.net	

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 PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).