

ENGINEERING STATEMENT  
ON BEHALF OF  
AMARILLO JUNIOR COLLEGE DISTRICT  
IN SUPPORT OF AN APPLICATION  
IN RESPONSE TO MM DOCKET NO. 09-70, RM-11534  
TO CONSTRUCT DTV FACILITIES FOR  
KACV-DT, AMARILLO, TEXAS  
CHANNEL 9 30 KW ERP 398 METERS HAAT  
SEPTEMBER 2009

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 )

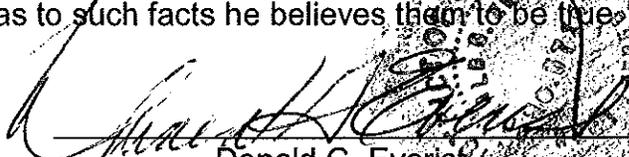
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

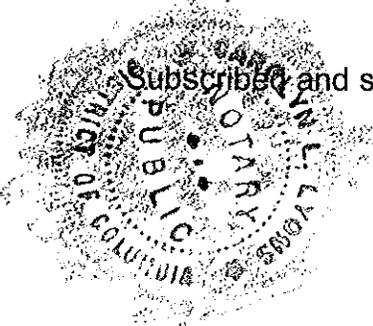
He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

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

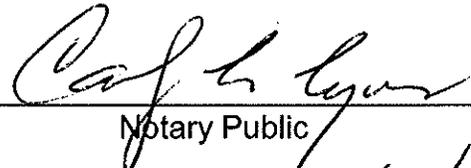
That the attached engineering report was prepared by him or under his supervision and direction and

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 1<sup>st</sup> day of September, 2009.

  
Notary Public

My Commission Expires: 2/28/2013

This engineering statement has been prepared on behalf of Amarillo Junior College District. The purpose of this engineering statement is to support its application for a permit to construct new digital television (D TV) facilities on Channel 9 to serve the community of Amarillo, Texas, and the surrounding area. This application is submitted pursuant to the rulemaking which authorizes to construct a DTV facility on Channel 9 in lieu of Channel 8.

Channel 9 is assigned for use by a noncommercial educational broadcast station to serve Amarillo, Texas, in the DTV Table of Allotments.<sup>1</sup> The following parameters were specified in the Federal Register.<sup>2</sup>

FCC File No. BPRM-20081126AUK

North Latitude: 35° 20' 33"

West Longitude: 101° 49' 21"

NAD-27

30 KW ND ERP, 398 meters HAAT

KACV-DT proposes to construct and operate a noncommercial educational broadcast station on DTV Channel 9 pursuant to the rulemaking with an average effective radiated power (ERP) of 30 kW non-directional (horizontal polarization) and a height above average terrain (HAAT) of 398 meters (1306 feet).

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<sup>1</sup>*Report and Order*, adopted July 13, 2009, MB Docket No. 09-270, RM-11534.

<sup>2</sup>Federal Register, Vol. 74, No. 150, Thursday, August 6, 2009, Page 39228.

Tower

The proposed new DTV antenna will be side-mounted on the tower, therefore, the overall structure height will remain unchanged. The transmitter site is located at Water Reclamation Plant Road and US 87. The Antenna Structure Registration No. is 1048587. Exhibit E-1 shows a vertical sketch of the tower.

The geographic coordinates (NAD-27) of the existing tower are:

North Latitude: 35° 20' 33"

West Longitude: 101° 49' 21"

Equipment Data

Antenna: Dielectric, Type THB-03-12/36-1 (or equivalent) horizontally polarized antenna with 0.6° electrical beam tilt. The vertical plane pattern and other exhibits required by Section 73.625(c) are included in Exhibit E-2.

Transmission Line: 1360 feet (415 m) of Dielectric, 3-1/8" 50 ohm line EIA rigid (or equivalent)

Power Data

Transmitter output (T PO) : E	3.89 kW	5.90 dBk
Transmission Line Efficiency/Loss:	65.4%	1.84 dB
Input power to the antenna:	2.54 kW	4.05 dBk
Antenna power gain:	11.8	10.72 dB
Effective Radiated Power (ERP) Main Lobe:	30 kW	14.77 dBk

Elevation Data

Vertical dimension of Channel 9 side-mounted antenna	19.0 meters 62.4 feet
Elevation of site above mean sea level	1046.3 meters 3432.7 feet
Overall height above ground of existing tower structure and appurtenances (including lightning protection)	456.9 meters 1499 feet
Overall height above mean sea level of existing tower and appurtenances (including lightning protection)	1503.2 meters 4931.8 feet
Center of radiation of Channel 9 antenna above ground	387.1 meters 1270 feet
Center of radiation of Channel 9 antenna above mean sea level	1433.4 meters 4702.8 feet
Antenna height above average terrain	398 meters 1306 feet

NOTE: Slight height differences result due to conversion to metric.

Coverage

The average elevation data for 3.2 to 16.1 km along each radial have been determined from the USGS 3-second terrain data base. The F(50,90) 43 dBu and 36 dBu DTV coverage contours have been computed from reference to the propagation data curves for Channels 7-13, as published by the FCC in Figure 10 and Figure 10a, Section 73.699 of the FCC Rules and Regulations. Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights, it is found that the depression

angle,  $A_n$ , varies from 0.52 to 0.602 degrees. Since the relative vertical field of the antenna pattern is greater than 90% of the maximum at these depression angles, the maximum power was used in determining the distance to the DTV contours.

Table I includes the distances to the 43 dBu and 36 dBu F(50,90) coverage contours, the average elevation from 3.2 to 16.1 km, and the antenna height above average terrain for every 45 degrees. The map of Exhibit E-3 shows that the 43 dBu F(50,90) coverage contour encompasses the community of license.

#### Interference Analysis

A comprehensive FCC Longley-Rice study was not performed since the proposed facilities are identical to that authorized by the rule making.

#### Rule, Section 1.1307

There are no AM stations within 3.22 km of the existing tower site. There are four full-service digital television and three full-service FM facilities located on the same tower or have coordinates that are similar. There are six TV translators authorized from this site or near by coordinates. Other than those listed, there are no other broadcast stations operating within 100 meters of the site according to CDBS.

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the licensee will install filters or take other measures as necessary to resolve the problem. The radio frequency field ("RFF")

contributions of the relevant facilities on the KACV and surrounding towers are summarized below.

#### Environmental Statement

There are nine other transmitters operating from the tower. The following broadcast stations are operating from the tower: KACV-DT, KCIT-DT, KAMR-DT, KEYU-DT, KEAT-LP, KCPN-LP, KEYU-LP, K59HG (CH.59), K59HG (CH.44), KAMT-LP, KEAM-LP, KACV-FM, KMXJ-FM, and KATP-FM. The radio frequency field (RFF) levels are determined below.

#### Station KACV-DT

Channel 9

Freq: 186-192 MHz Range

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

ERP = 30 kW (Horizontal only)

R = 385.1 meters (antenna height above ground - 2 meters)

F = 0.2

$$S = < 0.27 \mu\text{W}/\text{cm}^2$$

Therefore, KACV-DT contributes less than  $0.27 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

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

**KACV-DT contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station KCIT-DT**

Channel 15

Freq: 476 - 482 MHz Range

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

ERP = 925 kW (Horizontal only)

R = 443.7 meters (antenna height above ground  
- 2 meters)

F = 0.1 (assumed)

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

Therefore, KCIT-DT contributes less than  $1.6 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $319.3 \mu\text{W}/\text{cm}^2$ .

**KCIT-DT contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**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 = 443.7 meters (antenna height above ground  
- 2 meters)

F = 0.1 (assumed)

$$S = < 0.68 \mu\text{W}/\text{cm}^2$$

Therefore, KAMR-DT contributes less than  $0.68 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $335.3 \mu\text{W}/\text{cm}^2$ .

**KAMR-DT contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station KEYU-DT**

Channel 31

Freq: 572-578 MHz Range

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

ERP = 700 kW (Horiz and Vert)

R = 291.8 meters (antenna height above ground  
- 2 meters)

F = 0.3 (assumed)

$$S = < 24.7 \mu\text{W}/\text{cm}^2$$

Therefore, KEYU-DT contributes less than  $24.7 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $383.3 \mu\text{W}/\text{cm}^2$ .

**KEYU-DT contributes less than 6.4% 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

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

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

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

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

**Station KCPN-LP TX**

Channel 33

Freq: 584-590 MHz Range

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

ERP = 41.1 kW (Horizontal only)

R = 163.7 meters (antenna height above ground  
- 2 meters)

F = 0.2 (assumed)

$$S = < 1.03 \mu\text{W}/\text{cm}^2$$

Therefore, KCPN-LP contributes less than  $1.03 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $391.3 \mu\text{W}/\text{cm}^2$ .

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

**Station KEYU-LP**

Channel 44

Freq: 632-638 MHz Range

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

ERP = 123 kW (Horizontal only)

R = 291.8 meters (antenna height above ground  
- 2 meters)

F = 0.25 (assumed)

$$S = < 1.5 \mu\text{W}/\text{cm}^2$$

Therefore, KEYU-LP contributes less than  $1.5 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $423.3 \mu\text{W}/\text{cm}^2$ .

**KEYU-LP contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station K59HG TX**

Channel 48

Freq: 674-680 MHz Range

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

ERP = 25.8 kW (Horizontal only)

R = 291.8 meters (antenna height above ground  
- 2 meters)

F = 0.25 (assumed)

$$S = < 0.633 \mu\text{W}/\text{cm}^2$$

Therefore, K59HG contributes less than  $0.633 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $451.3 \mu\text{W}/\text{cm}^2$ .

**K59HG contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station K59HG**

Channel 59

Freq: 740-746 MHz Range

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

ERP = 25.8 kW (Horizontal only)

R = 291.8 meters (antenna height above ground  
- 2 meters)

F = 0.25 (assumed)

$$S = < 0.633 \mu\text{W}/\text{cm}^2$$

Therefore, K59HG contributes less than one  $\mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $495.3 \mu\text{W}/\text{cm}^2$ .

**K59HG contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station KAMT-LP TX**

Channel 50

Freq: 686-692 MHz Range

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

ERP = 150 kW (Horizontal only)

R = 291.8 meters (antenna height above ground  
- 2 meters)

F = 0.25 (assumed)

$$S = < 3.7 \mu\text{W}/\text{cm}^2$$

Therefore, KAMT-LP contributes less than  $3.7 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $459.3 \mu\text{W}/\text{cm}^2$ .

**KAMT-LP contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station KEAM-LP**

Channel 61

Freq: 752-758 MHz Range

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

ERP = 12 kW (Horizontal only)

R = 297.7 meters (antenna height above ground  
- 2 meters)

F = 0.25 (assumed)

$$S = < 0.141 \mu\text{W}/\text{cm}^2$$

Therefore, KEAM-LP contributes less than  $0.141 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for an uncontrolled environment (general population) is  $503.3 \mu\text{W}/\text{cm}^2$ .

**KEAM-LP contributes less than one percent RFF level for an uncontrolled environment (general population) two meters above the ground.**

**Station KACV-FM**

Channel 210C

Freq: 89.9 MHz Range

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

ERP = 100 kW (Horiz and Vert)

R = 335.9 meters (antenna height above ground  
- 2 meters)

F = 0.3 (assumed)

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

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

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

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

**Station KMXJ-FM**

Channel 231C

Freq: 94.1 MHz Range

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

ERP = 100 kW (Horiz and Vert)

R = 315.7 meters (antenna height above ground  
- 2 meters)

F = 0.3 (assumed)

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

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

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

**KMXJ-FM contributes less than 3.012% RFF level for an uncontrolled environment (general population) two meters above the ground.**

**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 = 269.7 meters (antenna height above ground  
- 2 meters)

F = 0.3 (assumed)

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

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

Therefore the total RFF level percentage two meters above the ground at the highest RF measurement point will be less than 21% of the limit for an uncontrolled environment, which is less than five percent of the limit for a controlled environment when KACV-DT is operational.

The licensee understands that the tower owner will require all authorized personnel climbing the tower will be alerted to the potential zones of high field levels on the tower.

Summary of 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

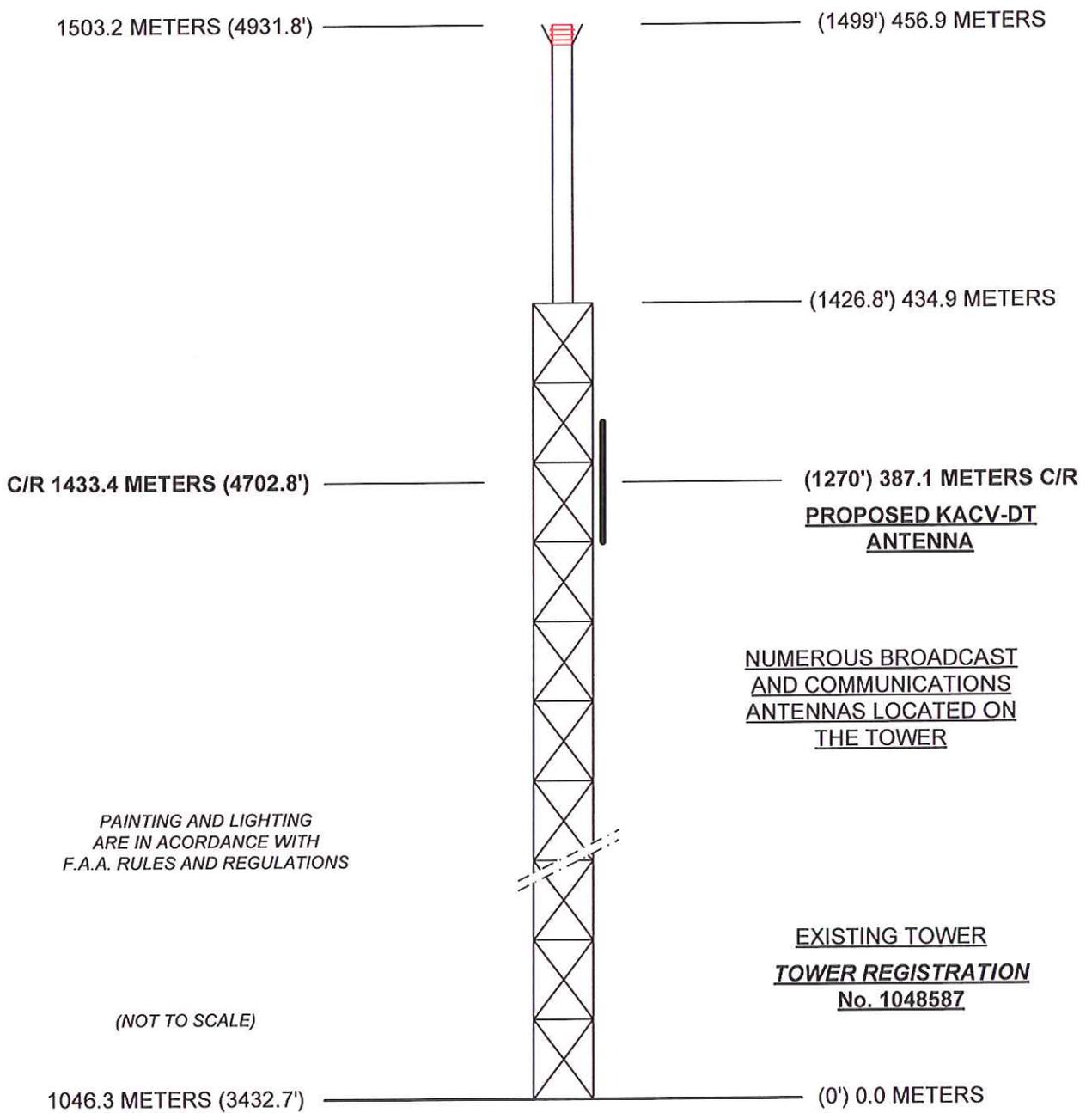


EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE PROPOSED DT OPERATION OF  
**KACV-DT, AMARILLO, TEXAS**  
AUGUST 2009

COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KACV-DT, AMARILLO, TEXAS



## MECHANICAL SPECIFICATIONS

### Antenna:

Type: THB-O3-12/36-1  
Channel: 9  
Location: Amarillo, Texas

Antenna Length (H2): 62.4 ft

Center of Radiation (H3): 31.2 ft



## SYSTEM SUMMARY

### Antenna:

Type:	THB-O3-12/36-1	ERP:	30 kW	H Pol	( 14.77 dBk )
Channel:	9	RMS Gain*:	11.8		( 10.72 dB )
Location:	Amarillo, Texas	Input Power:	2.54 kW		( 4.05 dBk )

### Transmission Line:

Type:	EIA Style Rigid TL	Attenuation:		1.84 dB
Size:	3-1/8" 50 ohm	Efficiency:	65.4%	
Length	1360 ft		415 m	

### Transmitter:

Average Power Required: 3.89 kW ( 5.90 dBk )

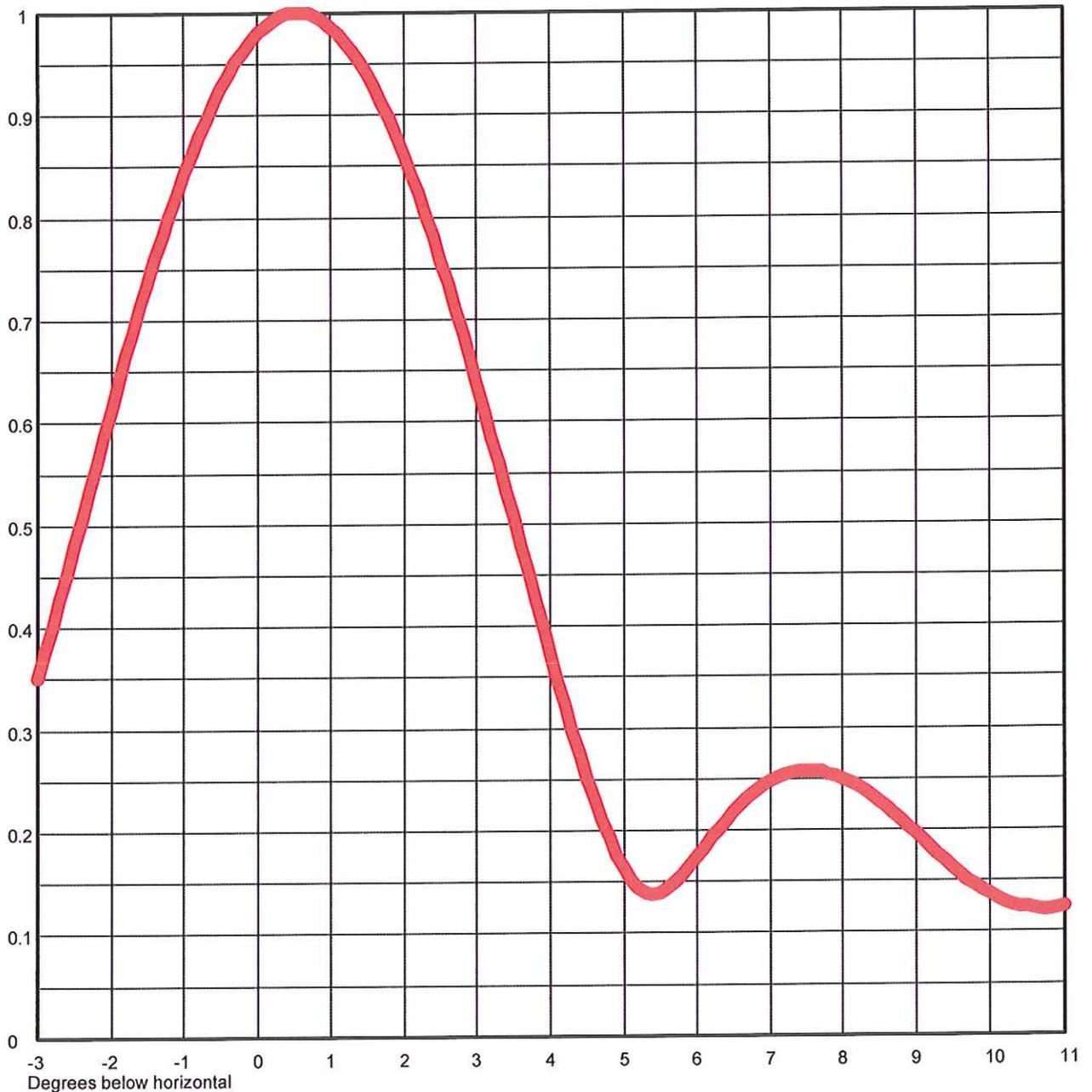
\* Gain is with respect to half wave dipole.



Date **10 Oct 2008**  
Call Letters **KACV-DT** Channel **9**  
Location **Amarillo, Texas**  
Customer **Amarillo Community College**  
Antenna Type **THB-O3-12/36-1**

**ELEVATION PATTERN**

RMS Gain at Main Lobe	<b>11.8 (10.72 dB)</b>	Beam Tilt	<b>0.60 Degrees</b>
RMS Gain at Horizontal	<b>11.3 (10.53 dB)</b>	Frequency	<b>189.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>12H118060</b>



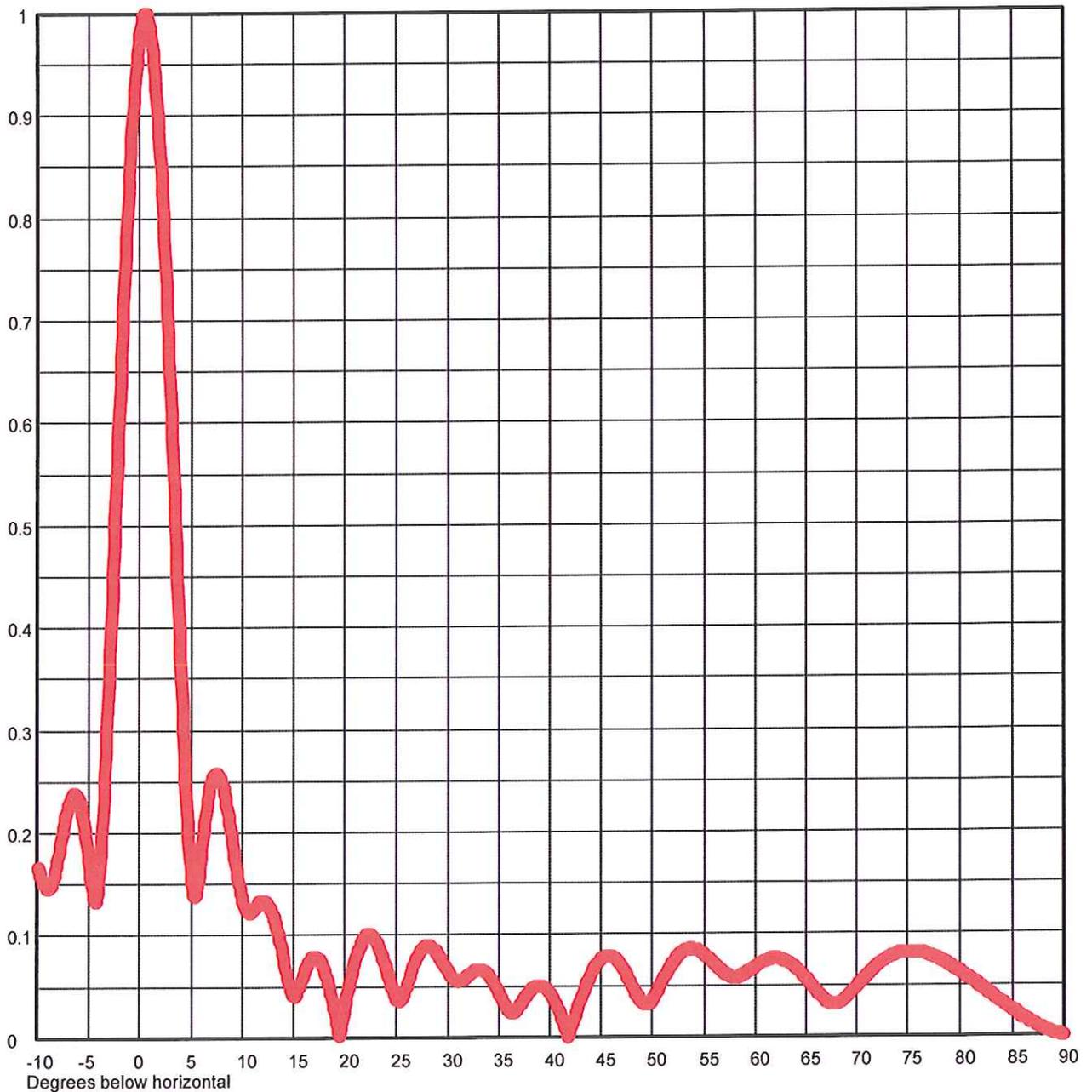
Remarks:



Date **10 Oct 2008**  
Call Letters **KACV-DT** Channel **9**  
Location **Amarillo, Texas**  
Customer **Amarillo Community College**  
Antenna Type **THB-O3-12/36-1**

**ELEVATION PATTERN**

RMS Gain at Main Lobe	<b>11.8 (10.72 dB)</b>	Beam Tilt	<b>0.60 Degrees</b>
RMS Gain at Horizontal	<b>11.3 (10.53 dB)</b>	Frequency	<b>189.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>12H118060-90</b>



Remarks:



Date **10 Oct 2008**  
 Call Letters **KACV-DT** Channel **9**  
 Location **Amarillo, Texas**  
 Customer **Amarillo Community College**  
 Antenna Type **THB-O3-12/36-1**

**TABULATION OF ELEVATION PATTERN**

Elevation Pattern Drawing # **12H118060-90**

Angle	Field										
-10.0	0.170	2.4	0.781	10.6	0.123	30.5	0.058	51.0	0.055	71.5	0.064
-9.5	0.155	2.6	0.735	10.8	0.122	31.0	0.055	51.5	0.064	72.0	0.069
-9.0	0.146	2.8	0.687	11.0	0.124	31.5	0.056	52.0	0.072	72.5	0.073
-8.5	0.152	3.0	0.637	11.5	0.130	32.0	0.060	52.5	0.079	73.0	0.076
-8.0	0.173	3.2	0.585	12.0	0.133	32.5	0.064	53.0	0.083	73.5	0.079
-7.5	0.200	3.4	0.532	12.5	0.130	33.0	0.066	53.5	0.085	74.0	0.080
-7.0	0.224	3.6	0.479	13.0	0.118	33.5	0.065	54.0	0.085	74.5	0.082
-6.5	0.237	3.8	0.426	13.5	0.100	34.0	0.061	54.5	0.084	75.0	0.082
-6.0	0.233	4.0	0.373	14.0	0.076	34.5	0.054	55.0	0.080	75.5	0.082
-5.5	0.211	4.2	0.323	14.5	0.053	35.0	0.044	55.5	0.076	76.0	0.082
-5.0	0.172	4.4	0.275	15.0	0.041	35.5	0.034	56.0	0.071	76.5	0.081
-4.5	0.136	4.6	0.231	15.5	0.047	36.0	0.026	56.5	0.066	77.0	0.079
-4.0	0.150	4.8	0.193	16.0	0.061	36.5	0.024	57.0	0.061	77.5	0.077
-3.5	0.232	5.0	0.163	16.5	0.073	37.0	0.029	57.5	0.059	78.0	0.075
-3.0	0.350	5.2	0.144	17.0	0.079	37.5	0.037	58.0	0.058	78.5	0.072
-2.8	0.401	5.4	0.138	17.5	0.076	38.0	0.044	58.5	0.059	79.0	0.069
-2.6	0.454	5.6	0.144	18.0	0.065	38.5	0.049	59.0	0.061	79.5	0.066
-2.4	0.507	5.8	0.157	18.5	0.048	39.0	0.050	59.5	0.064	80.0	0.063
-2.2	0.561	6.0	0.175	19.0	0.025	39.5	0.048	60.0	0.068	80.5	0.059
-2.0	0.613	6.2	0.193	19.5	0.002	40.0	0.043	60.5	0.071	81.0	0.055
-1.8	0.664	6.4	0.210	20.0	0.028	40.5	0.034	61.0	0.074	81.5	0.052
-1.6	0.713	6.6	0.226	20.5	0.053	41.0	0.023	61.5	0.075	82.0	0.048
-1.4	0.760	6.8	0.238	21.0	0.074	41.5	0.009	62.0	0.076	82.5	0.044
-1.2	0.803	7.0	0.248	21.5	0.090	42.0	0.006	62.5	0.075	83.0	0.040
-1.0	0.843	7.2	0.254	22.0	0.099	42.5	0.021	63.0	0.073	83.5	0.036
-0.8	0.880	7.4	0.258	22.5	0.100	43.0	0.036	63.5	0.070	84.0	0.032
-0.6	0.912	7.6	0.258	23.0	0.095	43.5	0.049	64.0	0.066	84.5	0.028
-0.4	0.939	7.8	0.255	23.5	0.083	44.0	0.061	64.5	0.062	85.0	0.025
-0.2	0.962	8.0	0.250	24.0	0.067	44.5	0.070	65.0	0.056	85.5	0.021
0.0	0.980	8.2	0.243	24.5	0.050	45.0	0.076	65.5	0.050	86.0	0.018
0.2	0.992	8.4	0.233	25.0	0.037	45.5	0.079	66.0	0.044	86.5	0.015
0.4	0.999	8.6	0.222	25.5	0.038	46.0	0.078	66.5	0.039	87.0	0.012
0.6	1.000	8.8	0.210	26.0	0.050	46.5	0.075	67.0	0.034	87.5	0.009
0.8	0.996	9.0	0.197	26.5	0.065	47.0	0.069	67.5	0.032	88.0	0.006
1.0	0.986	9.2	0.183	27.0	0.078	47.5	0.060	68.0	0.031	88.5	0.004
1.2	0.971	9.4	0.170	27.5	0.086	48.0	0.050	68.5	0.034	89.0	0.002
1.4	0.951	9.6	0.157	28.0	0.089	48.5	0.040	69.0	0.038	89.5	0.001
1.6	0.926	9.8	0.146	28.5	0.088	49.0	0.033	69.5	0.043	90.0	0.000
1.8	0.896	10.0	0.137	29.0	0.082	49.5	0.031	70.0	0.048		
2.0	0.861	10.2	0.130	29.5	0.074	50.0	0.036	70.5	0.054		
2.2	0.823	10.4	0.125	30.0	0.065	50.5	0.045	71.0	0.059		

Remarks:

COHEN, DIPPELL AND EVERIST, P. C.

TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
KACV-DR, AMARILLO, TEXAS  
CHANNEL 9 30 KW 398 METERS HAAT  
SEPTEMBER 2009

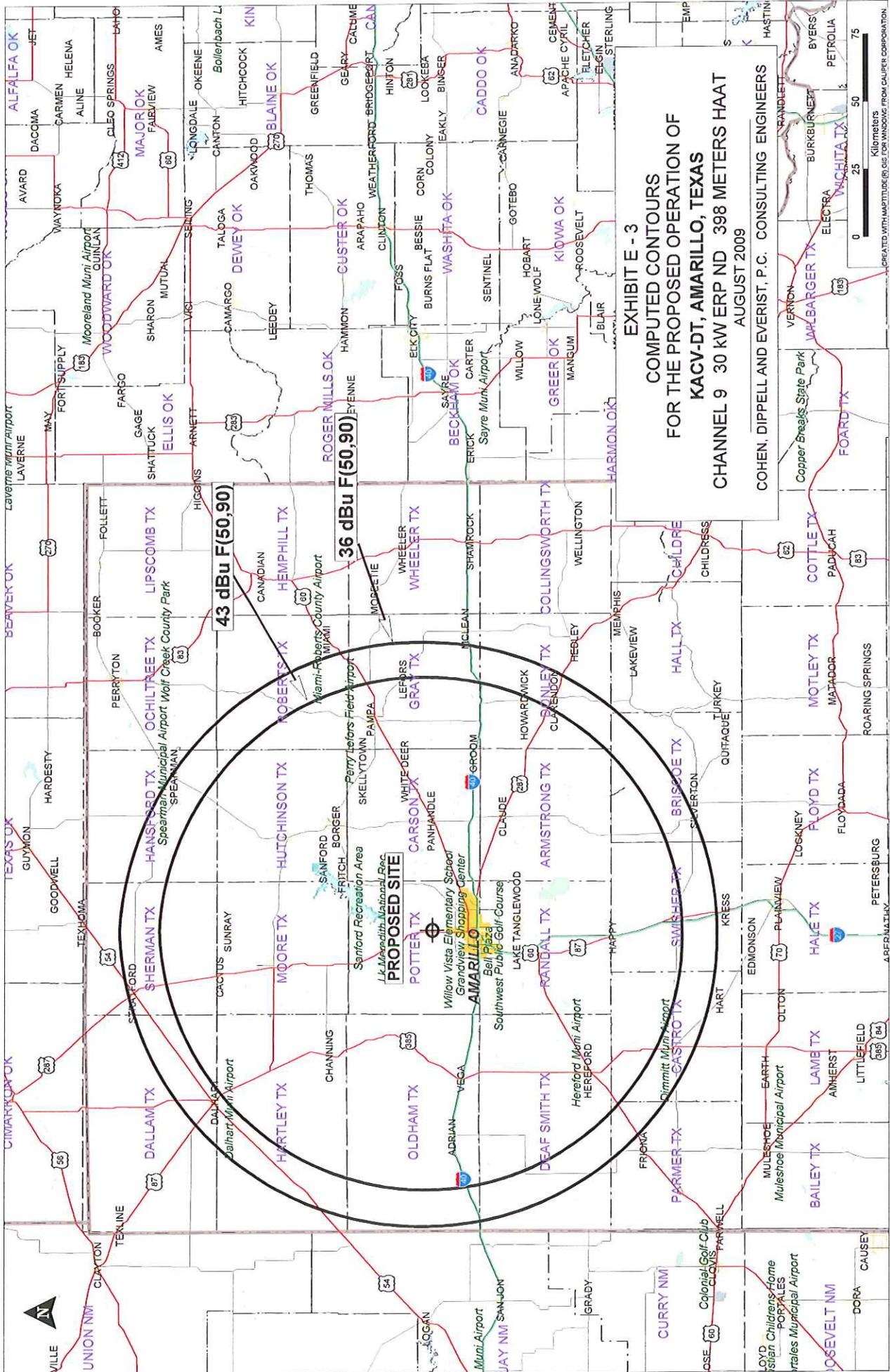
<u>Radial Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u>	<u>Effective Height</u> meters	<u>Depression Angle</u>	<u>ERP At Radio Horizon</u> kW	<u>Distance to Contour F(50,90)</u>	
	meters				<u>43 dBu City Grade</u> km	<u>36 dBu Noise-Limited</u> km
0	961.3	472.1	0.602	30	100.3	115.0
45	1014.6	418.8	0.567	30	96.7	110.5
90	1068.0	365.4	0.530	30	93.2	106.1
135	1081.2	352.2	0.520	30	92.2	105.1
180	1081.6	351.8	0.520	30	92.2	105.1
225	1051.5	381.9	0.541	30	94.4	107.4
270	1027.6	405.8	0.558	30	95.9	109.4
315	994.8	438.6	0.580	30	97.8	112.2
Average	1035.4	398				

\*Based on data from FCC 3-second data base

DTV Channel 9 (186-192 MHz)  
 Average Elevation 3.2 to 16.1 km 1035.4 meters AMSL  
 Center of Radiation 1433.4 meters AMSL  
 Antenna Height Above Average Terrain 398 meters  
 Effective Radiated Power 30 kW (14.77 dBk) Max.

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

(NAD-27)



**EXHIBIT E - 3**  
**COMPUTED CONTOURS**  
**FOR THE PROPOSED OPERATION OF**  
**KACV-DT, AMARILLO, TEXAS**  
**CHANNEL 9 30 KW ERP ND 398 METERS HAAT**  
**AUGUST 2009**

COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS



CREATED WITH MAPTUBE® GIS FOR WINDOWS FROM CALPULP CORPORATION

**SECTION VII - DTV Engineering**

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

**Pre-Transition Certification Checklist.** An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of these questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. 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.

**Post-Transition Expedited Processing.** An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed on or before March 17, 2008 (45 days of the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91).

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 a pre-transition facility 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  
 It will operate a pre-transition facility 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
  - (d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").   No  
 N/A
  - (e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.  Yes  No  
 N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RIF 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.

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 VII - 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 9 Analog TV, if any \_\_\_\_\_

2. Zone:  I  II  III

3. Antenna Location Coordinates: (NAD 27)

35 ° 20 ' 33 "  N  S Latitude  
101 ° 49 ' 21 "  E  W Longitude

4. Antenna Structure Registration Number: 1048587

Not applicable  FAA Notification Filed with FAA

5. Antenna Location Site Elevation Above Mean Sea Level: 1046.3 meters

6. Overall Tower Height Above Ground Level: 456.9 meters

7. Height of Radiation Center Above Ground Level: 387.1 meters

8. Height of Radiation Center Above Average Terrain: 398 meters

9. Maximum Effective Radiated Power (average power): 30 kW

10. Antenna Specifications:

Manufacturer	Dielectric	Model	THB-03-12/36-1
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a.  Not Applicable

b. Electrical Beam Tilt: 0.6 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.  
E-2

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 pre-transition 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.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?  Yes  No

Exhibit No.

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

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

Exhibit No.

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

Exhibit No.  
E

- 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 radio frequency 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.

**Section VII -- Preparer's Certification**

I certify that I have prepared Section VII (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 <b>Donald G. Everist</b>		Relationship to Applicant (e.g., Consulting Engineer) <b>Consulting Engineer</b>	
Signature 		Date <b>September 1, 2009</b>	
Mailing Address <b>Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100</b>			
City <b>Washington</b>		State or Country (if foreign address) <b>DC</b>	ZIP Code <b>20005</b>
Telephone Number (include area code) <b>(202) 898-0111</b>		E-Mail Address (if available) <b>cde@attglobal.net</b>	

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).