

ENGINEERING STATEMENT  
RE DTV BROADCAST ENGINEERING DATA  
APPLICATION FOR MODIFICATION OF  
CONSTRUCTION PERMIT (BMPCDT-20040312ADT)  
KFDX-DT, WICHITA FALLS, TEXAS  
CHANNEL 28 1000 KW ERP 274.3 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         )

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

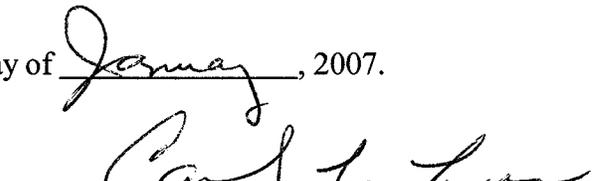
He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

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

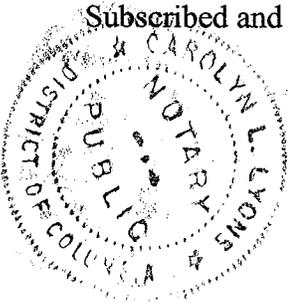
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
\_\_\_\_\_  
Martin R. Doczkat

Subscribed and sworn to before me this 22<sup>nd</sup> day of January, 2007.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Nexstar Broadcasting, Inc., licensee of KFDX-TV, Channel 3, Wichita Falls, Texas. The purpose of this engineering statement is to modify its DTV construction permit, FCC File No. BPCDT-19991029ACB for modification of construction permit.

KFDX-TV is licensed to operate on NTSC television Channel 3 with a maximum visual effective radiated power (ERP) of 100 kW (horizontal polarization) and height above average terrain (HAAT) of 305 meters (1000.7 feet). KFDX-DT has been allocated DTV Channel 28 with facilities of 1000 kW and HAAT of 305 meters in the revised DTV Table of Allotments.<sup>1</sup> KFDX-DT currently has a construction permit (FCC File No. BMPCDT-20040312ADT) for 1000 kW ERP at 305 meters HAAT. KFDX-DT proposes modification of construction permit to its DTV operation by constructing Channel 28 DTV facilities of 1000 kW non-directional (horizontal polarization) at an HAAT of 274.3 meters.

The DTV antenna will be side-mounted on the tower specified in FCC File No. BMPCDT-20040312ADT. The tower has an overall structure height above ground of 319.3 meters (1047.6 feet). Exhibit E-1 shows a vertical sketch and the arrangement of the antennas on the tower. The existing transmitter site is located at 4500 Seymour Highway, Wichita Falls, Texas.

The geographic coordinates of the site are:

North Latitude: 33° 53' 23"

West Longitude: 98° 33' 30"

NAD-27

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<sup>1</sup>“In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service”, MM Docket No. 87-286, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order (FCC 98-24) February 12, 1998, DTV Table of Allotments (Appendix B).

## Tower Registration No. 1044169

Equipment Data

Antenna: Dielectric TFU-32DSB-R O3 or equivalent

The elevation data is unavailable at this time, however, it is expected to exhibit similar performance as other antennas of this design.

Effective Radiated Power, Max. 1000 kW 30.0 dBk

Elevation Data

Overall height above ground of existing antenna structure (including appurtenances)	319.3 meters 1047.6 feet
Center of radiation of Channel 28 antenna above ground	271 meters 889.1 feet
Elevation of site above mean sea level	306 meters 1004 feet
Center of radiation of Channel 28 antenna above mean sea level	577 meters 1893 feet
Overall height above mean sea level of existing tower (including beacon)	625.3 meters 2151.5 feet
Antenna height above average terrain	274.3 meters

Coverage

The average elevation data for 3 to 16 km along the eight cardinal radials has been determined from the NGDC 3-second database. The F(50,90) DTV coverage contours have been computed from reference to the propagation data for Channel 28 as published by the FCC in Figure 10, 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,  $A_h$ , varies

from 0.451 to 0.466 degrees. Since the relative vertical field is greater than 90% of the maximum at these depression angles, the maximum power was used in determining the distance to the DTV contour.

Exhibit E-3 shows the proposed KFDX-DT, 48 dBu and 41 dBu F(50,90) coverage contours on a map and includes the legal boundaries of Wichita Falls, Texas.

#### Interference Analysis

An analysis of predicted interference caused by the proposed KFDX-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 km<sup>2</sup> 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 KFDX-DT to any potentially affected facility above the outstanding construction permit.

#### Other Licensed and Broadcast Facilities

There are no AM stations within 3.22 km of the proposed site. There are numerous FM and TV broadcast stations located within 2 km of the proposed site. No adverse technical effect is anticipated by the DTV operation to any other FCC licensed facility, however, if any problems occur, the permittee will take the necessary steps to resolve them.

#### Radio Frequency Field Level ("RFF Level")

<u>Station</u>	<u>ERP</u> (kW)	<u>HAAT</u> (m)	<u>Frequency</u> (MHz)	<u>Ch</u>	<u>RCAGL</u> (m)	<u>F*</u>	<u>S (μW/cm<sup>2</sup>)</u>	<u>RFF</u> (%)
KFDX-DT Prop. Max	1000	274.3	557	28	271	0.1	4.6	1.3

\*F = assumed value

\*\* RCAGL = 2 meters

The addition of the KFDX-DT facilities will contribute approximately  $4.6 \mu\text{W}/\text{cm}^2$  or 1.3% of the limit for an uncontrolled environment to the total RFF levels from the existing operational facilities.

Section 1.1307

The proposed operation based upon the current OET Bulletin No.65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field guidelines, and thus, complies with Section 1.1307 of the FCC Rules.

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 permittee indicates:

- (a)(1) The proposed facilities are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities are 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 proposed facilities are not located near any known Indian religious sites.

- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower at an existing site will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) The existing tower lighting will remain unchanged.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin 65 (Edition 97-01) and Supplement A. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines. A security fence with a locked gate precludes access to the tower site.



Cohen, Dippell and Everist, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KFDX-DT, WICHITA FALLS, TEXAS

UNAVAILABLE (SEE TEXT)

Cohen, Dippell and Everist, P.C.

TABLE I  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED DTV OPERATION OF  
KFDX-DT, WICHITA FALLS, TEXAS  
CHANNEL 28 1000 KW 274.3 METERS HAAT  
JANUARY 2007

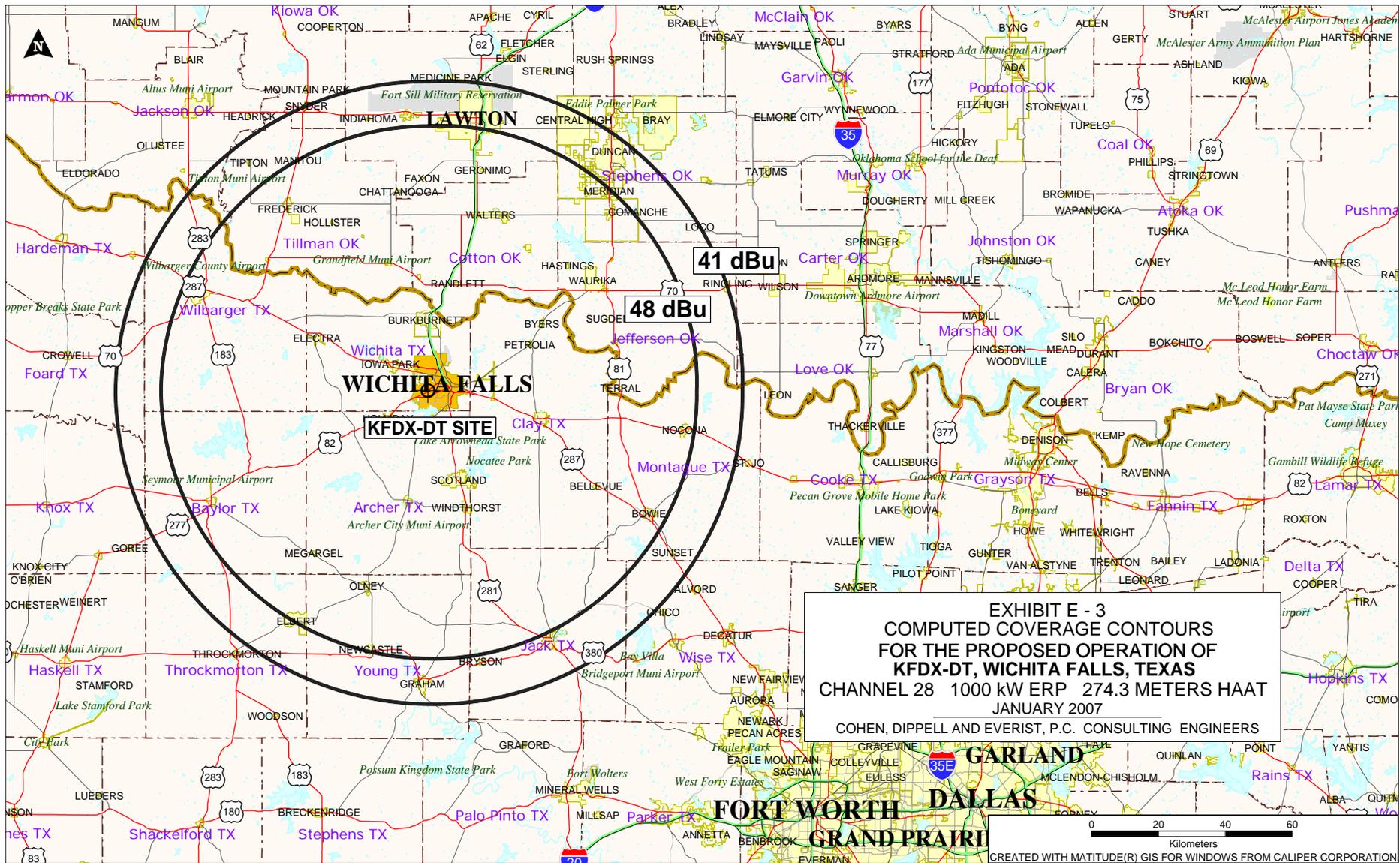
Radial Bearing N ° E, T	Average* Elevation 3.2 to 16.1 km meters	Effective Height meters	Depressio n Angle	ERP At Radio Horizon kW	Distance to Contour F(50,90)	
					48 dBu City Grade km	41 dBu Noise-Limited km
0	311.8	265.2	0.451	1000	78.9	92.2
45	294.1	282.9	0.466	1000	80.9	94.7
90	299.4	277.6	0.462	1000	80.3	93.9
135	296.9	280.1	0.464	1000	80.6	94.3
180	303.5	273.5	0.458	1000	79.8	93.4
225	305.3	271.7	0.457	1000	79.6	93.1
270	302.2	274.8	0.459	1000	80.0	93.6
315	308.6	268.4	0.454	1000	79.2	92.6
Average	302.7	274.3				

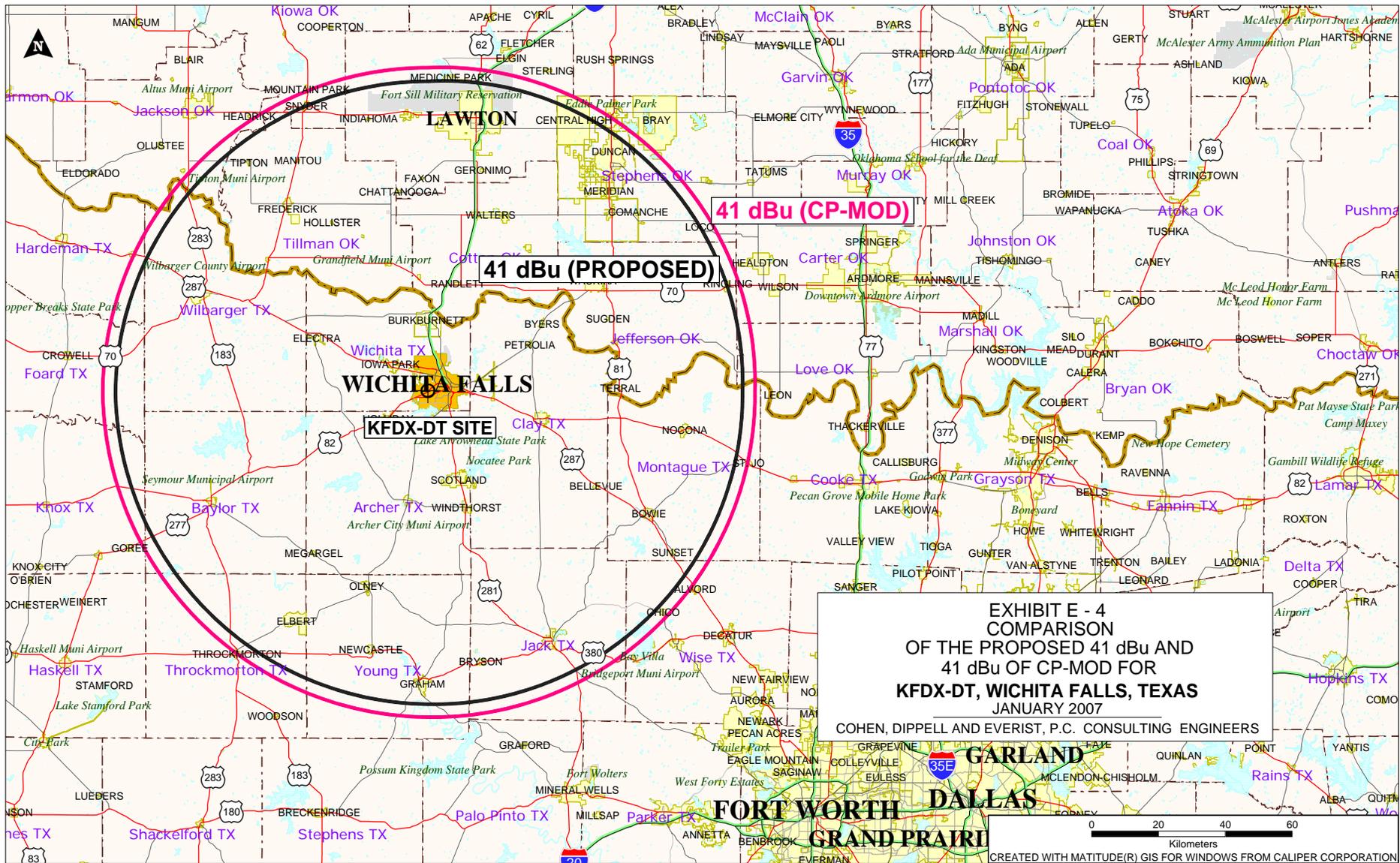
\*Based on data from FCC 3-second data base

DTV Channel 28 (554-560 MHz)  
Average Elevation 3.2 to 16.1 km 302.7 meters AMSL  
Center of Radiation 577 meters AMSL  
Antenna Height Above Average Terrain 274.3 meters  
Effective Radiated Power 1000 kW (30 dBk) Max.

North Latitude: 33° 53' 23"  
West Longitude: 98° 33' 30"

(NAD-27)





41 dBu (CP-MOD)

41 dBu (PROPOSED)

KFDX-DT SITE

**EXHIBIT E - 4**  
**COMPARISON**  
**OF THE PROPOSED 41 dBu AND**  
**41 dBu OF CP-MOD FOR**  
**KFDX-DT, WICHITA FALLS, TEXAS**  
**JANUARY 2007**

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

0 20 40 60  
 Kilometers

CREATED WITH MATITUDE(R) GIS FOR WINDOWS FROM CALIPER CORPORATION

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II  
LONGLEY-RICE ANALYSIS  
ABOVE THE OUTSTANDING CONSTRUCTION PERMIT  
(FCC FILE NO. BMPCDT-20040312ADT)  
FOR THE PROPOSED OPERATION OF  
KFDX-DT, WICHITA FALLS, TEXAS  
CHANNEL 28 1000 KW ERP ND 274.3 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>
20	KOKT-LP	SULPHUR OK	141.7	LIC	BLTTL-19970414JA	no interference
20	K20DN	WICHITA FALLS TX	6.1	LIC	BLTTL-19931112IA	no interference
27	KFOR-DT	OKLAHOMA CITY OK	213.5	LIC	BLCDT-20050701ABR	0.00%
27	KFOR-DT	OKLAHOMA CITY OK	210.6	ALLOT		no interference
28	KTPX-DT	OKMULGEE OK	309.8	LIC	BLCDT-20020510AAQ	0.00%
28	KTPX-DT	OKMULGEE OK	309.8	ALLOT		0.00%
28	KHPX-CA	GEORGETOWN TX	375.2	LIC	BLTTA-20020408AAP	no interference
28	KAMC(TV)	LUBBOCK TX	307	LIC	BLCT-1848	0.00%
29	KTUZ-DT	SHAWNEE OK	190.9	CP MOD	BMPCDT-20040729ANF	no interference
29	KTUZ-DT	SHAWNEE OK	209.9	APP	BMPCDT-20060707AFM	no interference
29	KTUZ-DT	SHAWNEE OK	190.7	ALLOT		no interference
29	KRBC-DT	ABILENE TX	209.6	CP MOD	BMPCDT-20040802AMT	no interference
29	KRBC-DT	ABILENE TX	209.3	ALLOT		no interference
29	KMPX(TV)	DECATUR TX	206.8	LIC	BLCT-20050707ABJ	no interference
30	K30DJ	WICHITA FALLS TX	1.7	LIC	BLTTL-19931112IW	0.00%

**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.

- 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
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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.**

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).