

ENGINEERING STATEMENT
MODIFICATION OF DTV SPECIAL TEMPORARY AUTHORITY
(FCC FILE NO. BDSTA-20031105AJD)
ON BEHALF OF
KPBT-DT, ODESSA, TEXAS
CHANNEL 38 220 KW ERP 80 METERS HAAT

JUNE 2006

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)

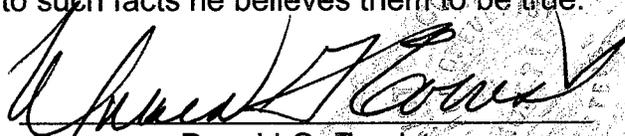
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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;

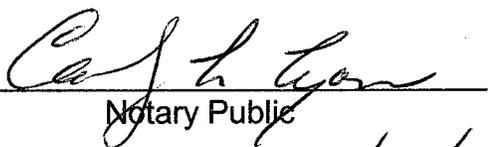
That the attached engineering report was prepared by him or under his supervision and direction and

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.

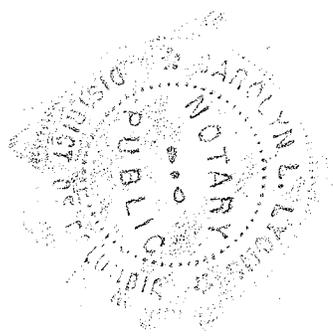


Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 28th day of June, 2006.


Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Permian Basin Public Telecommunications, Inc., licensee of KPBT, Odessa, Texas. The purpose of this engineering statement is to accompany its request for application for modification of its STA for digital television ("DTV") facilities (FCC File No. BDSTA-20031105AJD) and to supplement those data required in FCC Form 340.

KPBT-TV, a non-commercial, educational broadcast station, operates on NTSC Television Channel 36 with a maximum visual effective radiated power ("ERP") of 513 kW directional (horizontal polarization) and a height above average terrain ("HAAT") of 88 meters. KPBT-DT has been allocated DTV Channel 22 with facilities of 50 kW and HAAT of 88 meters in the revised DTV Table of Allotments.¹ KPBT-DT has subsequently been granted a rulemaking (MB Docket No. 02-95, RM-10421) to replace its allocated DTV Channel 22 with Channel 38 and now has an outstanding permit to construct DTV facilities of 500 kW and 80 meters HAAT (FCC File No. BMPEDT-20030212AAR). KPBT-DT now proposes to modify its outstanding STA (FCC File No. BDSTA-20031105AJD) by constructing DTV facilities of 220 kW non-directional ERP (horizontal polarization) at a HAAT of 80 meters. The proposed 220 kW non-directional ERP operation will ensure that KPBT-

¹"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), 2/12/98, DTV Table of Allotments, Appendix B.

DT will serve approximately 100%² of its FCC Form 381 certified facility to satisfy the July 1, 2006 build-out "use-or-lose" deadline.

There are no AM stations located within 3.22 km of the existing KPBT-TV tower site. There are no FM stations, no other full-service television stations aside from the proposed operation, and one low-power television station, KTLE-LP, transmitting from this site. According to technical staff at the KPBT-TV tower site, KPBT-TV and KOCV(FM) both operate on the same tower more than 200 meters away from the proposed KPBT-DT tower site.

KPBT-DT Tower

The KPBT-DT tower hosts an antenna from which the Channel 38 DTV signal will be transmitted. The proposed DTV antenna will be side-mounted on the tower, therefore, the overall structure height will remain unchanged. The transmitter site is located at 201 W. University Blvd., Odessa, Texas.

The Antenna Structure Registration No. is 1046916. Exhibit E-1 provides a vertical sketch of the tower.

The geographic coordinates of the existing tower are:

North Latitude: 31° 51' 58"

West Longitude: 102° 22' 48"

NAD-27

²Longley-Rice analysis predicts that the proposed 220 kW non-directional ERP operation will serve approximately 99.6% of the FCC Form 381 certified facility which is within a 0.5% rounding tolerance of the 100% requirement set forth for continuance of operation on the currently authorized KPBT-DT channel.

Equipment Data

Antenna: Andrew, Type ATLO20-H3-HSO-38 (or equivalent) horizontally polarized antenna with 0.75° electrical beam tilt. The vertical plane pattern and other exhibits required by Section 73.625(c) are included in Exhibit E-2.

Transmission Line: 305 feet of Andrew, HJ11-50, 4", Air Dielectric, Heliax 50 ohm line

Power Data

Transmitter output:	14 kW	11.46 dBk
Transmission Line Loss:	78.9 %	1.03 dB
Input power to the antenna:	11.04 kW	10.43 dBk
Antenna power gain, Main Lobe	20	13.01 dB
Effective Radiated Power, Maximum	220 kW	23.44 dBk

Elevation Data

Vertical dimension of Channel 38 side-mounted antenna	11.6 meters 38.1 feet
Elevation of site above mean sea level	888 meters 2913 feet
Overall height above ground of the proposed antenna and tower structure (including beacon)	91 meters 299 feet
Overall height above mean sea level of proposed tower (including beacon)	979 meters 3212 feet
Center of radiation of Channel 38 antenna above ground	84 meters 276 feet

Center of radiation of Channel 38 antenna above mean sea level	972 meters 3189 feet
Antenna height above average terrain	80 meters

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) 48dBu and 41 dBu DTV coverage contours have been computed from reference to the propagation data curves for Channels 14-69, as published by the FCC in Figure 10b and Figure 10c, 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 0.22 to 0.28 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.

Table I includes the distances to the 48 dBu and 41 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. Exhibit E-3 shows that the 48 dBu F(50,90) coverage contour encompasses the community of license. In Exhibit E-4, the proposed 41 dBu F(50,90) coverage contour is fully contained within the 41 dBu F(50,90) coverage contour of the outstanding construction permit.

Other Licensed and Broadcast Facilities

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the applicant will install filters or take other measures as necessary to resolve the problem.

FCC Rule, Section 1.1307

The proposed 220 kW operation will utilize an Andrew, Type ATLO20-H3-HSO-38 antenna or the equivalent as described above with a center of radiation above ground of 84 meters. The antenna is side-mounted on the existing single guyed, uniform, cross-section, steel lattice tower with an overall height of 91 meters AGL.

As previously indicated, there are no AM stations located within 3.22 km of the existing tower site. Access to the tower is prevented by a chain link fence with a locked gate.

The proposed operation, based upon the current OET Bulletin No. 65, Edition No. 97-01, dated August 1997 and Supplement A, meets the provisions of the FCC radio frequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. Provisions will be made to reduce power or to terminate the transmitter emissions, as appropriate, when it is necessary for authorized personnel to be on the tower. The calculated values of the individual RFF contributions are outlined below.

The elevation pattern provided by the manufacturer for the proposed KPBT-DT operation shows a maximum relative field of less than 0.1 towards the ground in the vicinity of the tower (see Exhibit E-2). Using this relative field factor and the procedures prescribed

in OET Bulletin 65, the maximum RFF resulting from the proposed operation is less than 10.9 $\mu\text{W}/\text{cm}^2$. This is less than 2.7% of the 411.3 $\mu\text{W}/\text{cm}^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general public.

KTLE-LP low power television station will continue to transmit from an Andrew, Type AL8 antenna with 5.5 kW maximum ERP at a center of radiation 86.8 meters above ground level. The antenna manufacturer's data indicate that the elevation pattern for this antenna has a maximum relative field value of less than 0.1 towards the ground in the vicinity of the tower (from 65° to 90° below the horizontal). Using this relative field factor and the procedures prescribed in OET Bulletin No. 65, the maximum RFF resulting from the proposed NTSC operation at two meters above the base of the tower is calculated to be less than 0.2 microwatts/ cm^2 . This is less than 0.1% of the 339.3 microwatts/ cm^2 maximum uncontrolled exposure to RFF recommended by the current FCC guidelines for the general population.

The total contribution by the proposed DTV operation and the existing low-power television operation at 2 meters above ground level is less than 2.8% of the current FCC guidelines for general population exposure.

Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

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 applicant indicates:

- (a)(1) The proposed facilities located on an existing tower are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities located on an existing tower are not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities located on an existing tower 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 will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities located on an existing tower 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.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

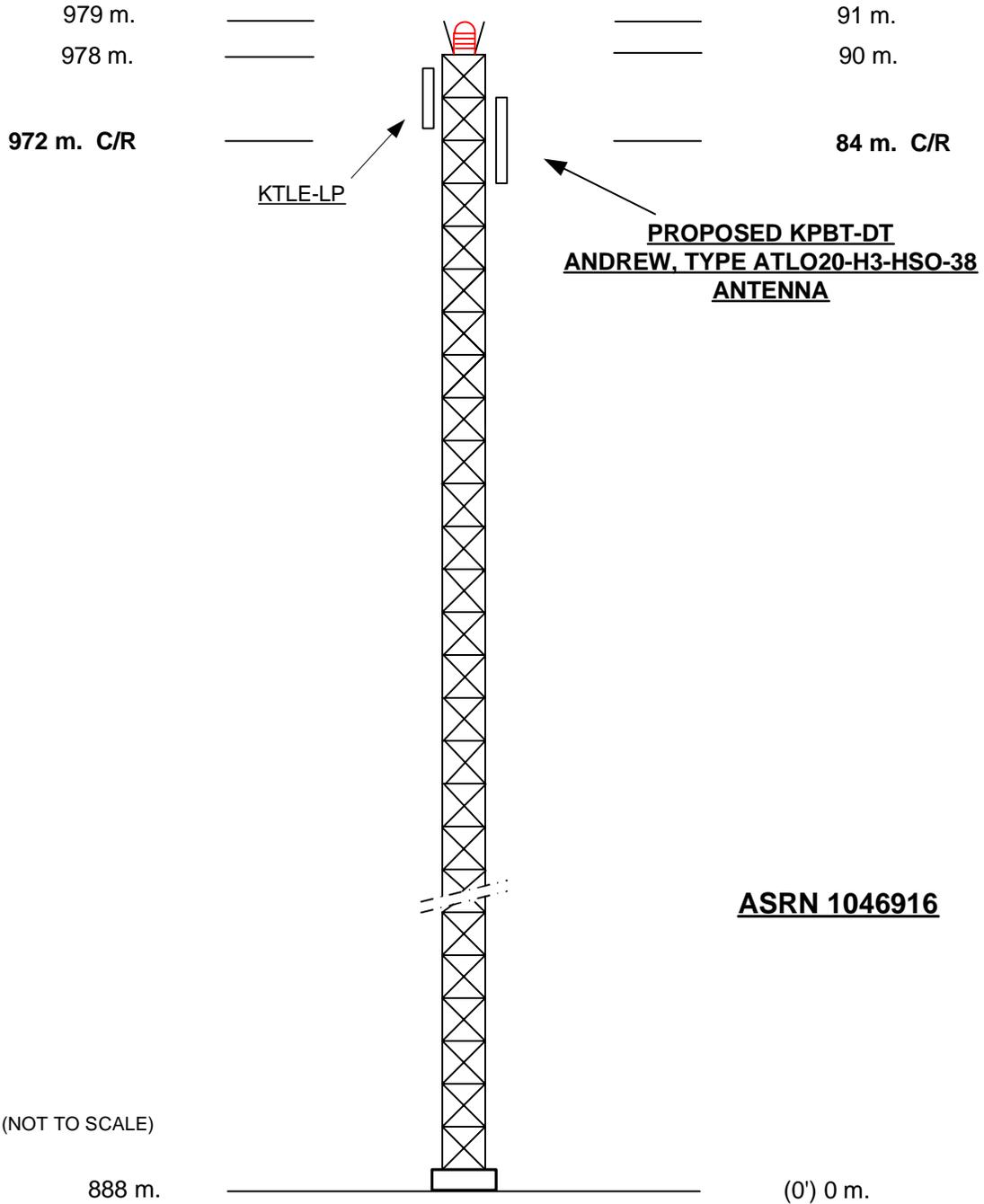


EXHIBIT E - 1
TOWER SKETCH
FOR THE PROPOSED OPERATION OF
KPBT-DT, ODESSA, TEXAS
JUNE 2006

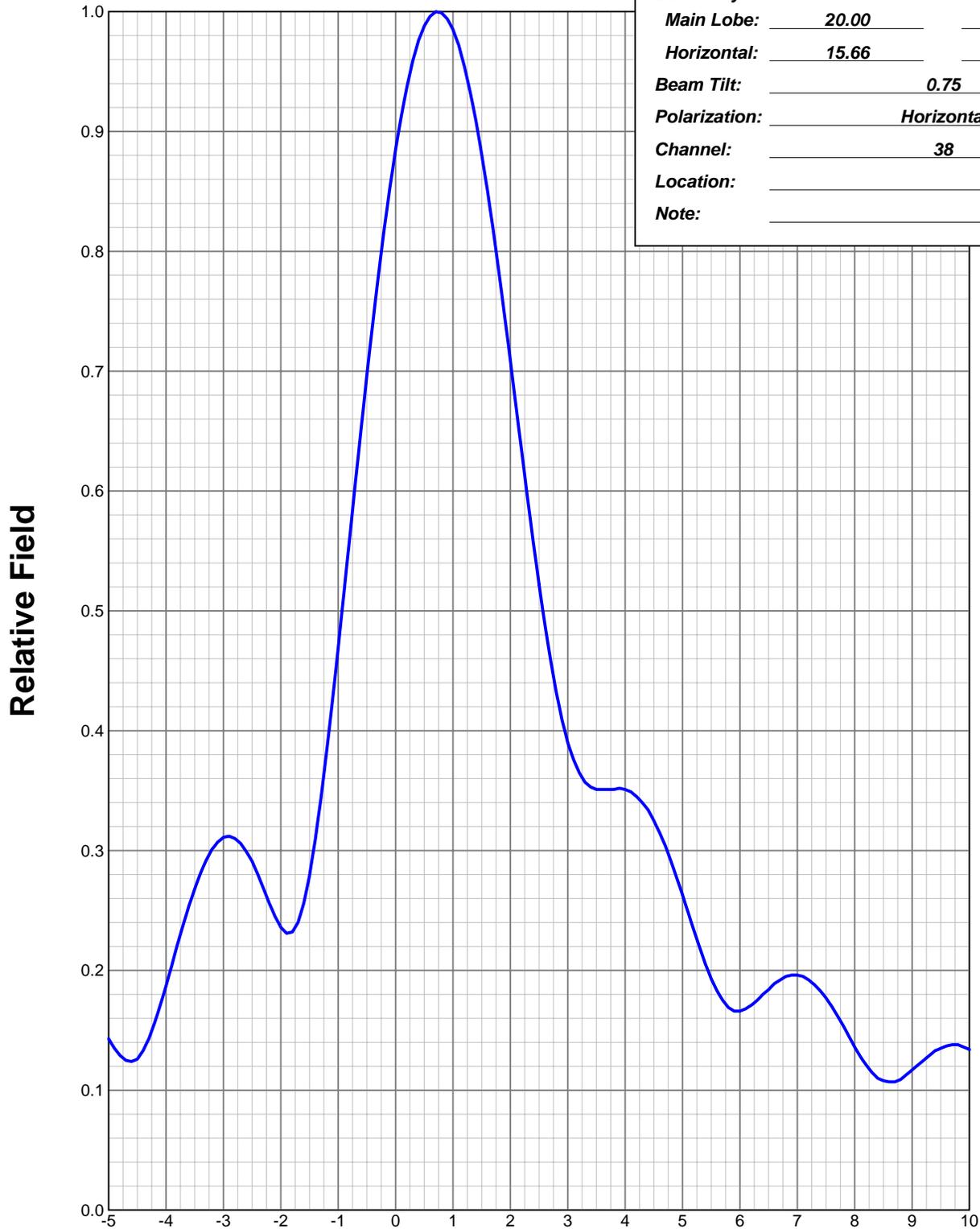
EXHIBIT E-2

ANTENNA MANUFACTURER DATA
FOR THE PROPOSED OPERATION OF
KPBT-DT, ODESSA, TEXAS



ELEVATION PATTERN

Type:	ATL20H3H	
Directivity:	Numeric	dBd
Main Lobe:	20.00	13.01
Horizontal:	15.66	11.95
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	38	
Location:		
Note:		



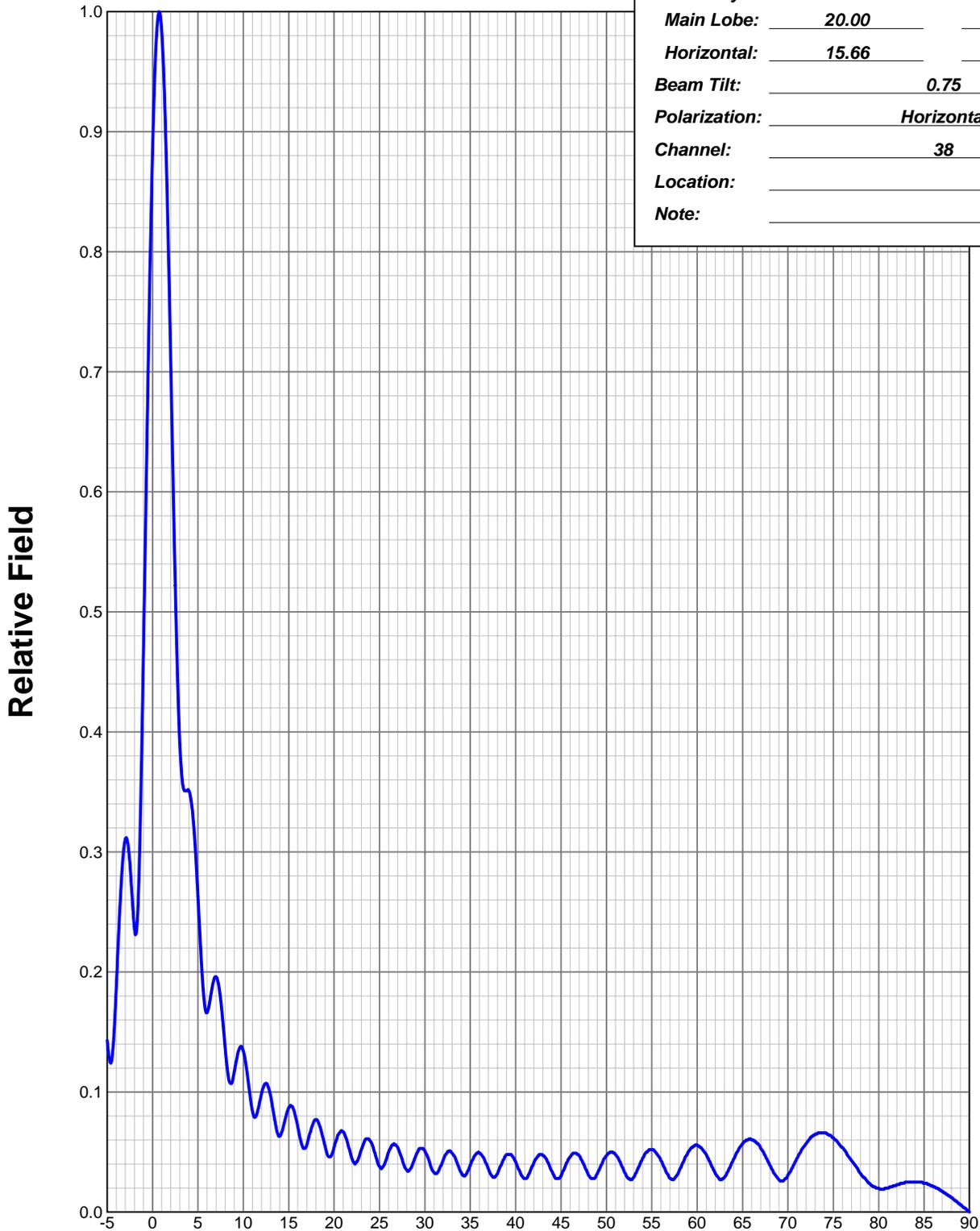
ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A 60462



ANDREW®

ELEVATION PATTERN

Type:	ATL20H3H	
Directivity:	Numeric	dBd
Main Lobe:	20.00	13.01
Horizontal:	15.66	11.95
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	38	
Location:		
Note:		



ANDREW CORPORATION
10500 W. 153rd Street
Orland Park, Illinois U.S.A 60462

TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
KPBT-DT, ODESSA, TEXAS
CHANNEL 38 220 KW 80 METERS HAAT
JUNE 2006

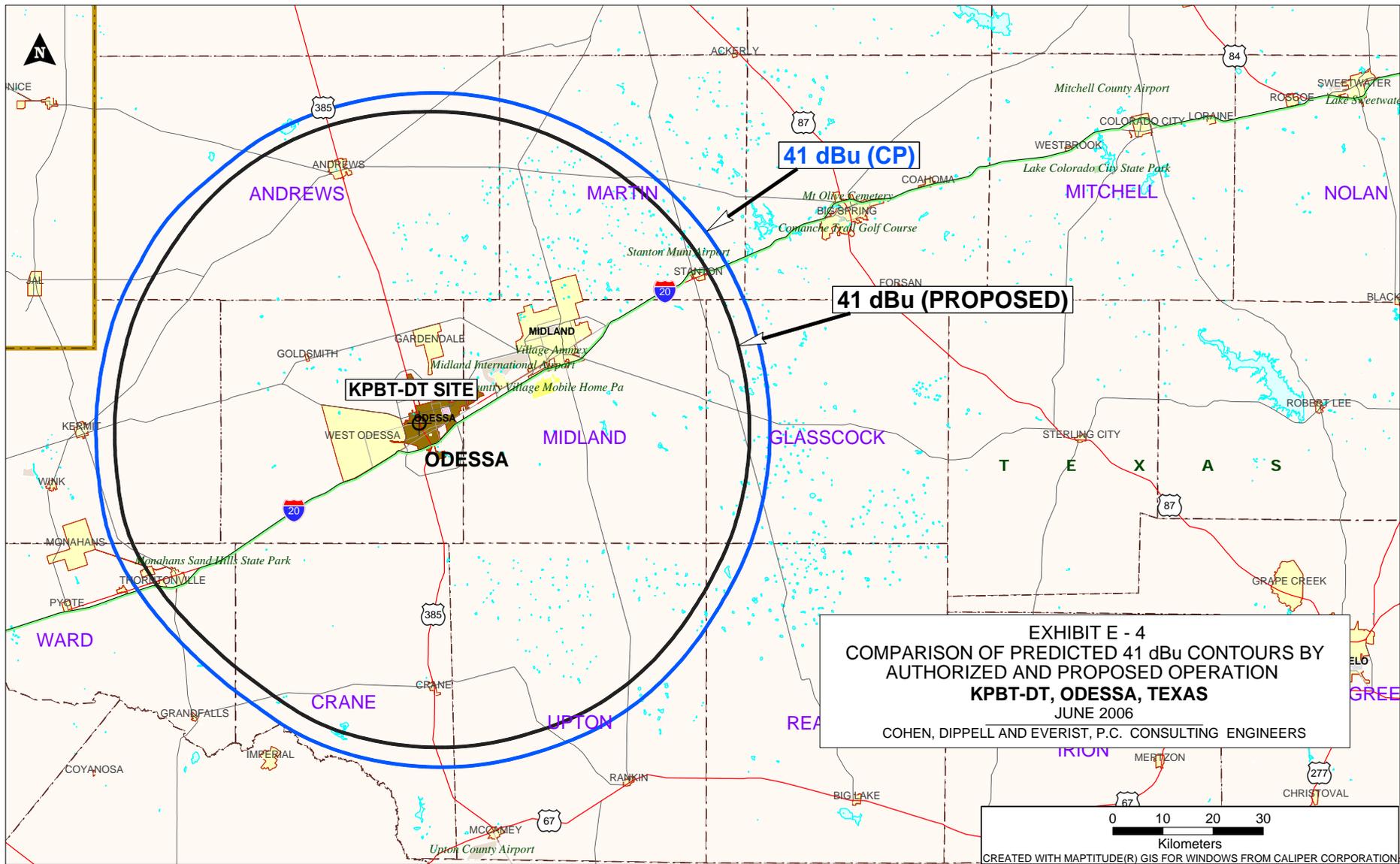
<u>Radial Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u> <u>meters</u>	<u>Effective Height</u> <u>meters</u>	<u>Depression Angle</u>	<u>ERP At Radio Horizon</u> <u>kW</u>	<u>Distance to Contour F(50,90)</u>	
					<u>48 dBu City Grade</u> <u>km</u>	<u>41 dBu Noise-Limited</u> <u>km</u>
0	900.5	71.5	0.234	220	54.6	61.7
45	887.6	84.4	0.254	220	56.6	63.8
90	872.3	99.7	0.277	220	58.7	65.8
135	868.4	103.6	0.282	220	59.2	66.2
180	884.5	87.5	0.259	220	57.1	64.2
225	907.2	64.8	0.223	220	53.4	60.6
270	906.0	66.0	0.225	220	53.6	60.8
315	907.7	64.3	0.222	220	53.3	60.5
Average	892.0	80.0				

*Based on data from FCC 3-second data base

DTV Channel 38 (614-620 MHz)
Average Elevation 3.2 to 16.1 km 892 meters AMSL
Center of Radiation 972 meters AMSL
Antenna Height Above Average Terrain 80 meters
Effective Radiated Power 220 kW (23.42 dBk)

North Latitude: 31° 51' 58"
West Longitude: 102° 22' 48"

(NAD-27)



41 dBu (CP)

41 dBu (PROPOSED)

KPBT-DT SITE

EXHIBIT E - 4
COMPARISON OF PREDICTED 41 dBu CONTOURS BY
AUTHORIZED AND PROPOSED OPERATION
KPBT-DT, ODESSA, TEXAS
 JUNE 2006
 COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS

0 10 20 30
 Kilometers
 CREATED WITH MAPTITUDE(R) GIS FOR WINDOWS FROM CALIPER CORPORATION

SECTION VII- 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 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 _____ 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 ON PAGE 8 MUST BE COMPLETED AND SIGNED.

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 Martin R. Doczkat Cohen, Dippell and Everist, P.C.		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date June 28, 2006	
Mailing Address 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).