

ENGINEERING STATEMENT
APPLICATION FOR MODIFICATION OF OUTSTANDING
DTV CONSTRUCTION PERMIT
(FCC FILE NO. BNPDTT-20090828ADL)
K36KE-D, ARDMORE, OKLAHOMA
CHANNEL 36 15 kW ND ERP 334.2 METERS RC/AMSL

APRIL 2013

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)

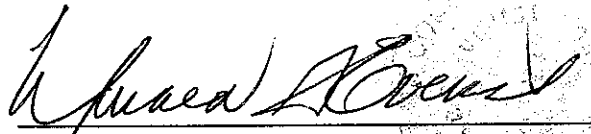
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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 1420 N Street, N.W., Suite One, 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

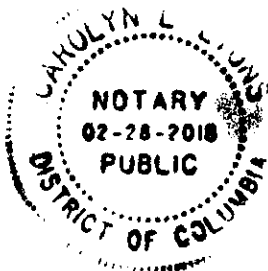
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.


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

Subscribed and sworn to before me this 11th day of April, 2013.


Notary Public

My Commission Expires: 2/28/2018



INTRODUCTION

This engineering statement has been prepared on behalf of Oklahoma Educational Television Authority (“OETA”), permittee of TV translator K36KE-D, Ardmore, Oklahoma. This statement supports the licensee’s request for modification to change site of this outstanding construction permit, FCC File No. BNPDTT-20090828ADL, of 15 kW at a radiation center above mean sea level (“RCAMSL”) of 334.2 meters.

OETA, a state agency, had an informal understanding that it could locate on the tower specified in the construction permit. Appendix A provides a detailed description of OETA’s efforts to build out and commission K36KE-D. This site offered an antenna height of over 1500 feet above ground, however, in subsequent conversations, the tower owner withdrew its offer. Therefore, in an effort to license this facility a new tower site has been identified owned by another state agency, Oklahoma State Regents for Higher Education.

TRANSMITTER SITE

The antenna will be top-mounted on an existing tower and no significant alteration of the tower is proposed. The existing tower is located 0.6 miles east of Intersection I-35 and State Highway 142, Ardmore, Oklahoma. Exhibit E-1 depicts the existing tower with the proposed modification. The geographic coordinates of the site follow below.

North Latitude: 34° 12' 10"

West Longitude: 97° 09' 12"

NAD-27

EQUIPMENT DATA

Transmitter: Type-approved

Transmission Line: RFS, Type HCA 158-50J air dielectric,
1-5/8", 76.2 meters (250 feet) with 75%
efficiency [0.5 dB loss/100 ft]

Out-of-Channel
Emission Mask: Simple

Antenna: Radio Frequency Systems PTY LTD, model
number RD8OM-5786 38L1T00
with maximum power gain of 14.39 (11.58
dB) and 0.5° electrical beam tilt

POWER DATA

Transmitter:	1.39 kW	1.429 dB
Transmission Line Efficiency/Loss:	75%	1.25 dB
Input Into Antenna:	1.042	0.179 dB
Antenna Gain:	14.39	11.58 dB
ERP:	15 kW	11.76 dB

ELEVATION DATA

Elevation of site above mean sea level	268.8 meters (881.9 feet)
Center of radiation of antenna above ground level	65.4 meters (214.5 feet)
Center of radiation of antenna above mean sea level	334.2 meters (1096.4 feet)
Proposed Overall height of tower above ground	68.9 meters (226 feet)

An aeronautical filing has been performed and sent to the Federal Aviation Administration (“FAA”). The FAA Study Number is 2013-ASW-2317-OE.

As indicated above, the transmitter with typical power output of 1.39 kW will deliver 1.042 kW to the input of the antenna. The antenna, having a maximum power gain of 14.39 and an electrical beam tilt of 0.5° , will produce an ERP of 15 kW. A coverage map of the proposed facility has been included as Exhibit E-2 of this report. Table I provides the predicted distance to the normally protected contour at intervals every 30 degrees starting with True North. The antenna elevation pattern as supplied by the antenna manufacturer is provided in Exhibit E-3. Exhibit E-4 shows the predicted coverage for the outstanding construction permit versus that requested herein.

OTHER BROADCAST FACILITIES

A brief analysis was completed to determine the presence of stations in the vicinity of the K36KE tower using the April 4, 2013 data contained within the Commission’s Consolidated Database System (“CDBS”). Within 100 meters of the proposed site, there is one authorized FM radio station identified and no authorized DTV television stations, and no other low-power analog television and television translator stations. There is one AM facility within 3.2 km of the existing tower. That station is KVSO and operates on the assigned frequency with non-directional facilities day and night. The KVSO transmitter site is located 2.42 km from the proposed K36KE-D operation. This is beyond the distance of 0.8 km specified in Section 73.1692 of the FCC Rules.

Interference Analysis

A study of predicted interference caused by the proposed K36KE-D digital translator operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at http://www.fcc.gov/oet/dtv/dtv_apps.html. The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Microsoft Windows XP/Intel platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program with the simple emission mask. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2000 census centroids, all studies are based upon data in the current CDBS database update of the FCC's engineering database. A Longley-Rice study was performed with the proposed K36KE low-power digital facilities and all relevant stations listed in the FCC database as of April 3, 2013. The study results and the included stations are listed in Table II.

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 licensee will install filters or take other measures as necessary to resolve the problem.

FCC Rule, Section 1.1307

The proposed 15 kW non-directional operation will utilize a Radio Frequency Systems RD8OM-5786 38L1T00 antenna (or equivalent) with a center of radiation above ground of 65.4 meters. The proposed antenna is top-mounted on a steel lattice tower with a proposed overall height of 68.9 meters above ground.

As previously indicated, there is one AM station located beyond 0.8 km of the proposed tower site and therefore does not need to be considered. According to the FCC database, there is one FM station and no full-service television station, and no low-power analog television or television translator stations within 100 meters of the existing tower site. Access to the existing tower property is prevented by a security fence with a locked gate.

The technical parameters for the proposed Channel 36 operation are 15 kW ERP with the antenna radiation center at 65.4 meters above ground using the Radio Frequency Systems Type RD8OM-5786 38L1T00 antenna (assumed 0.1 relative field value).

Based on calculations and the methodology from the current OET Bulletin No. 65, Edition 97-01 dated August 1997 and Supplement A produces less than $2 \mu\text{W}/\text{cm}^2$ RFF on Channel 36 which is less than 1% of the Maximum Permissible Exposure ("MPE") limit for an uncontrolled environment two meters above ground in the vicinity of the K36KE tower site. This proposal complies with the FCC radiofrequency field ("RFF") guidelines and the RFF element of Section 1.1307 of the FCC Rules.

The licensed FM facility, KLCU(FM) antenna is located at approximately 54.2 meters above ground. Assuming a downward field factor of 0.28 produces less than $25 \mu\text{W}/\text{cm}^2$ RFF on

Channel 212 which is less than 13% of maximum FM permissible exposure limit for an uncontrolled environment two meters above ground.

Therefore, the total uncontrolled exposure level is less than 15% of the current FCC guidelines.

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 or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

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 permittee 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 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 change the tower lighting 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.

APPENDIX A

Statement By
Oklahoma Educational Television Authority

APPENDIX A
STATEMENT BY
OKLAHOMA EDUCATIONAL TELEVISION AUTHORITY
ON TOWER AVAILABILITY FOR
OUTSTANDING CONSTRUCTION PERMIT
BNPDTT-20090828ADL

Oklahoma Educational Television Authority ("OETA") did have a positive commitment discussion with the current tower owners and manager for the site specified in the translator outstanding construction permit, FCC File No. BNPDTT-20090828ADL. Further, the tower owner was very agreeable to allow OETA to use its spare digital line and would permit OETA to locate the K36KE transmitter in their transmitter building. Subsequently, the tower owners just changed their mind. The tower owner also indicated that the tower would not support the OETA translator antenna at any level based on a tower study.

OETA feels the need to buildout K36KE-D digital operation. K28AC-D, the current digital translator, is very power limited and the tower owner (Cable One Company) on which K28AC antenna is located now has decided to take down the tower.

OETA with limited funds has sought to build out Channel 36. K36KE-D will better serve the area with the higher power and will ensure Ardmore continues to receive the OETA signal since the K28AC-D tower site will be soon dismantled.

OETA recognizes that the construction permit expires June 2, 2013. OETA is diligently pursuing the buildout at the Oklahoma State Regents for Higher Education's site. OETA has commissioned a structural tower study. Further, it has identified a company to improve the foundations based on the completed tower study. OETA has on hand the antenna and transmission line. OETA has identified a tower erector for their installation. Upon receiving FCC approval, those steps will be taken promptly.

Therefore, OETA requests expedited processing and, if necessary, will seek an extension to complete the buildout.

Respectfully,


Mark Norman Deputy Director
OETA

DATE: 4/11/13

ABOVE MEAN SEA LEVEL

ABOVE GROUND

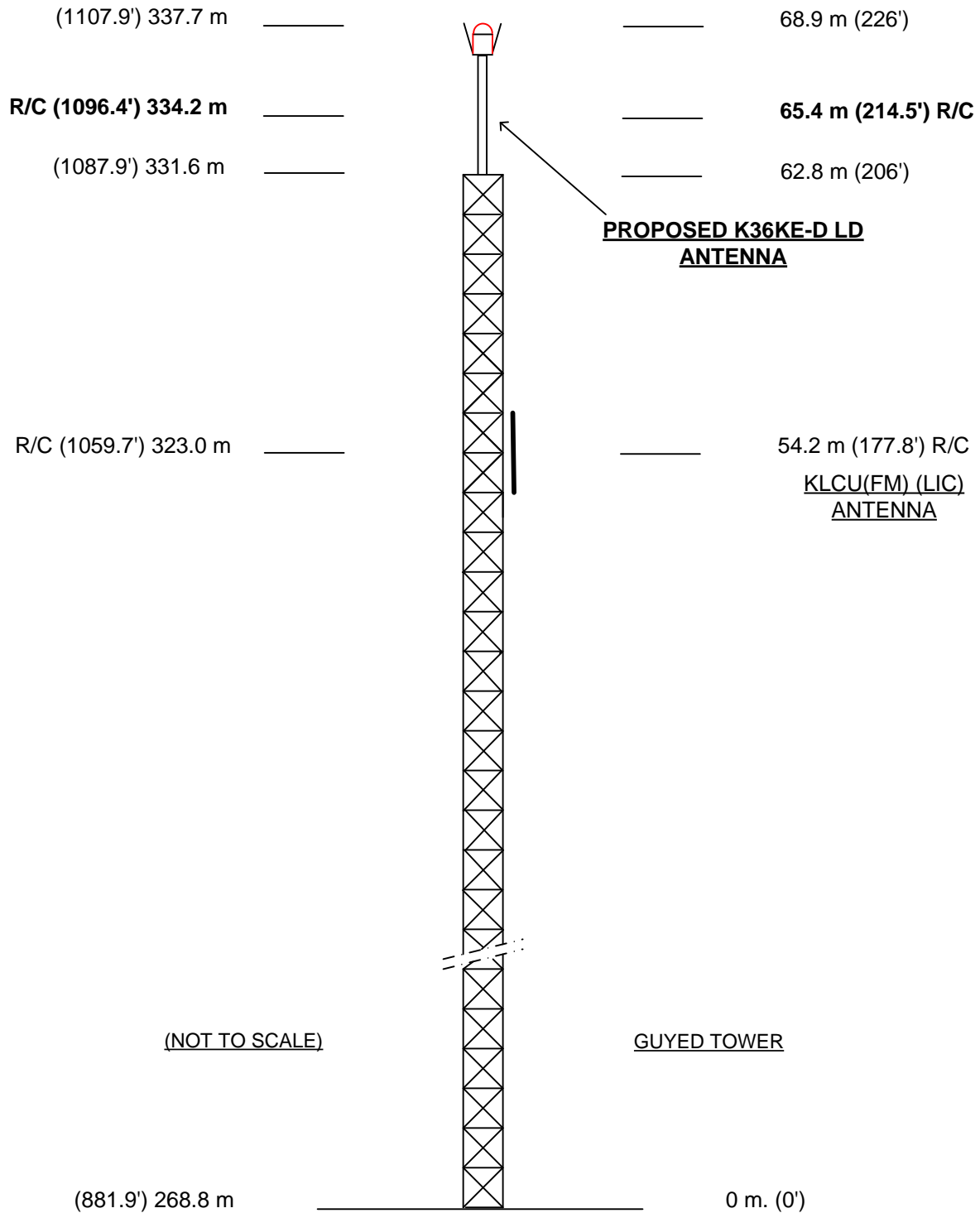


EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
K36KE-D LD, ARDMORE, OKLAHOMA
APRIL 2013

Cohen, Dippell and Everist, P.C.

TABLE I
COMPUTED NORMALLY PROTECTED CONTOUR
FOR THE PROPOSED OPERATION OF
K36KE, ARDMORE, OKLAHOMA
CHANNEL 36 15 KW ERP 334.2 METERS RCAMSL
APRIL 2013

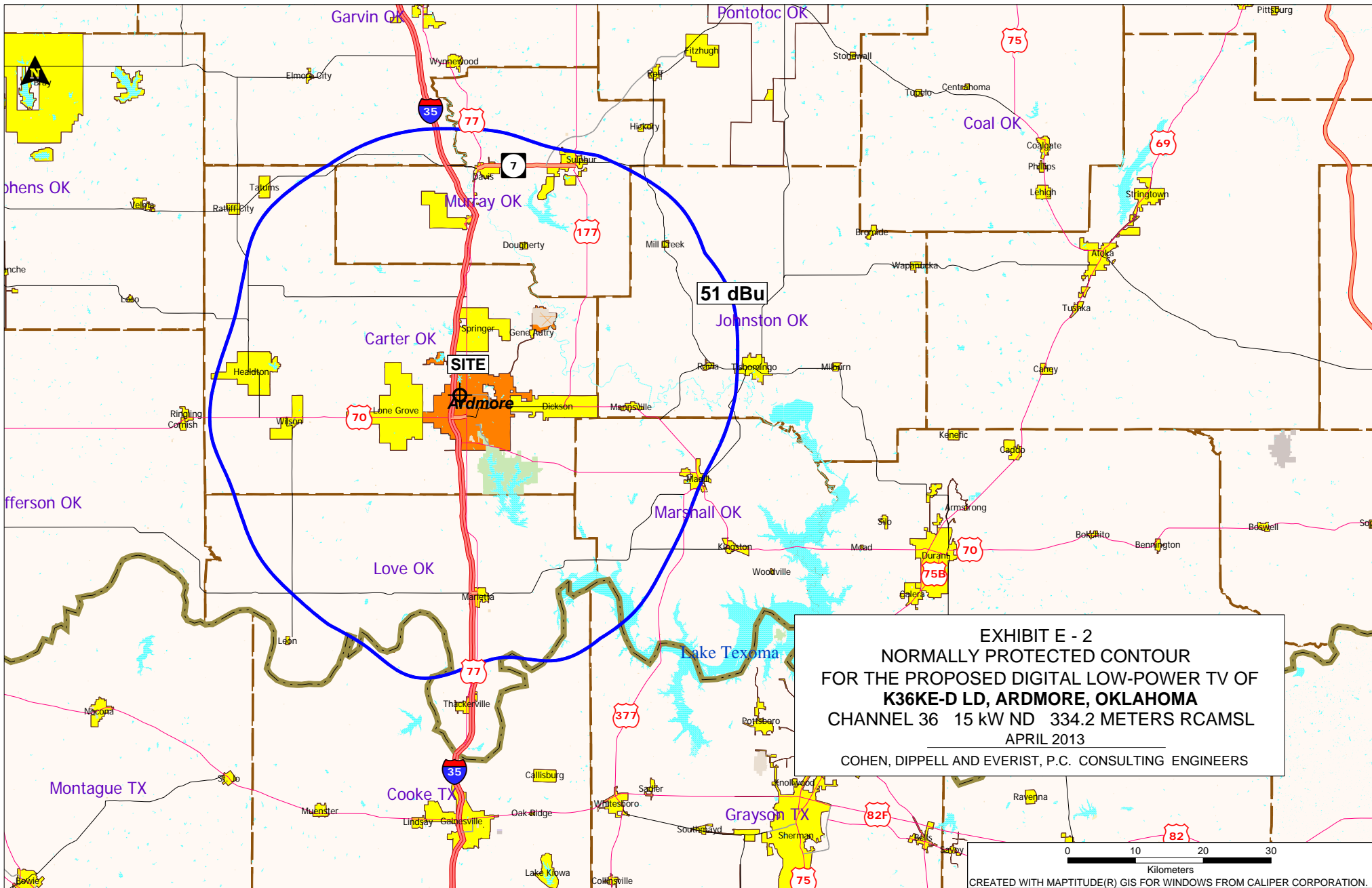
<u>Radial</u> <u>Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u> meters	<u>Effective</u> <u>Height</u> meters	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour F(50,90)</u> 51 dBu <u>Protected</u> km
0	263.2	71.0	15	38.7
30	252.8	81.4	15	40.2
60	245.1	89.1	15	41.3
90	252.8	81.4	15	40.3
120	268.4	65.8	15	37.9
150	247.5	86.7	15	41.0
180	253.7	80.5	15	40.1
210	263.8	70.4	15	38.6
240	275.6	58.6	15	36.7
270	277.2	57.0	15	36.4
300	277.1	57.1	15	36.4
330	263.8	70.4	15	38.6

*Based on data from FCC 3-second data base

DTV Channel 36 (602-608 MHz)
Average Elevation 3.2 to 16.1 km 261.8 meters AMSL
Center of Radiation 334.2 meters AMSL
Antenna Height Above Average Terrain 73.49 meters
Effective Radiated Power 15 kW (11.76 dBk) Max.

North Latitude: 34° 12' 10"
West Longitude: 97° 09' 12"

(NAD-27)



Cohen, Dippell and Everist, P.C.

EXHIBIT 3

ANTENNA MANUFACTURER DATA

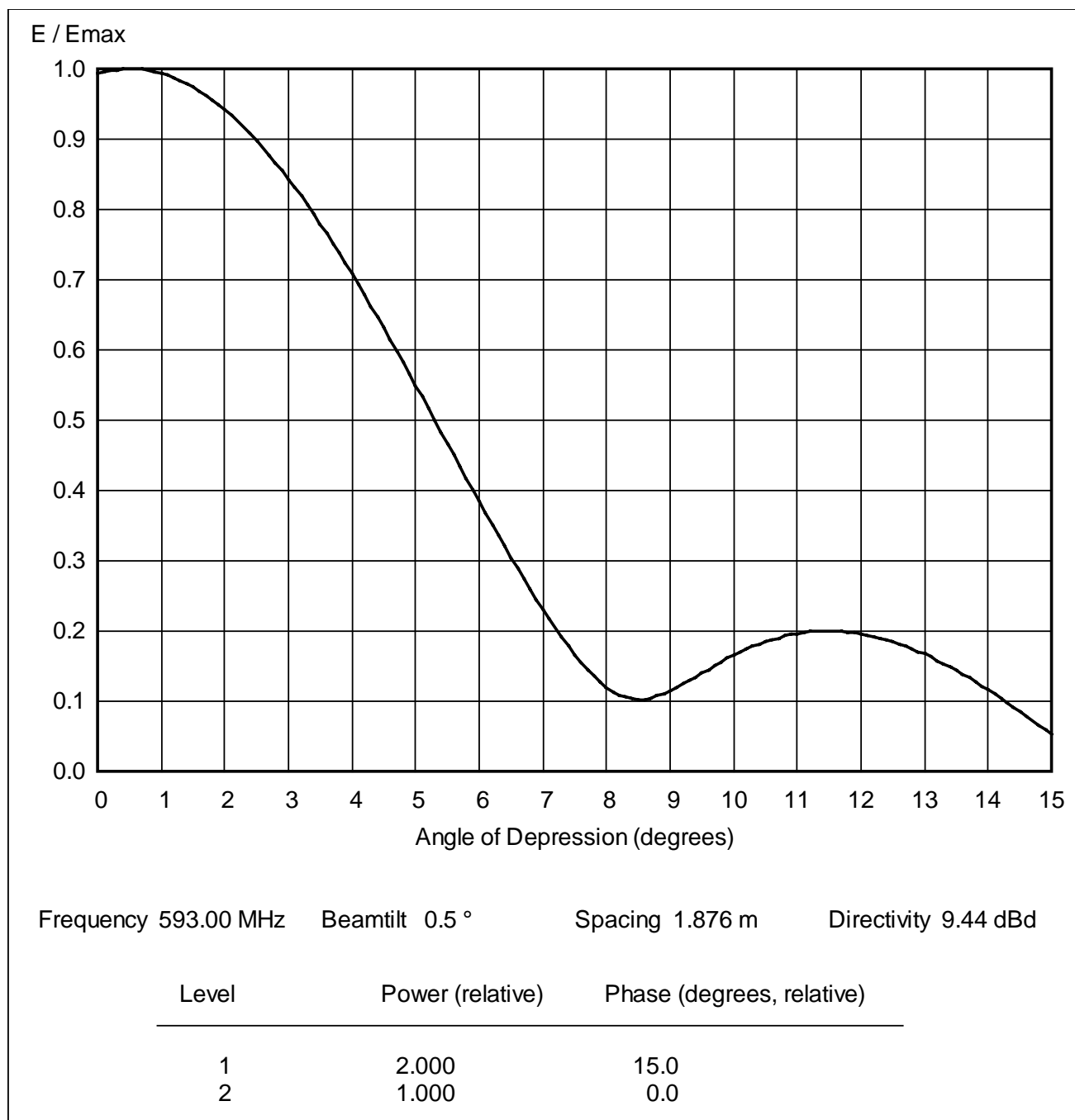
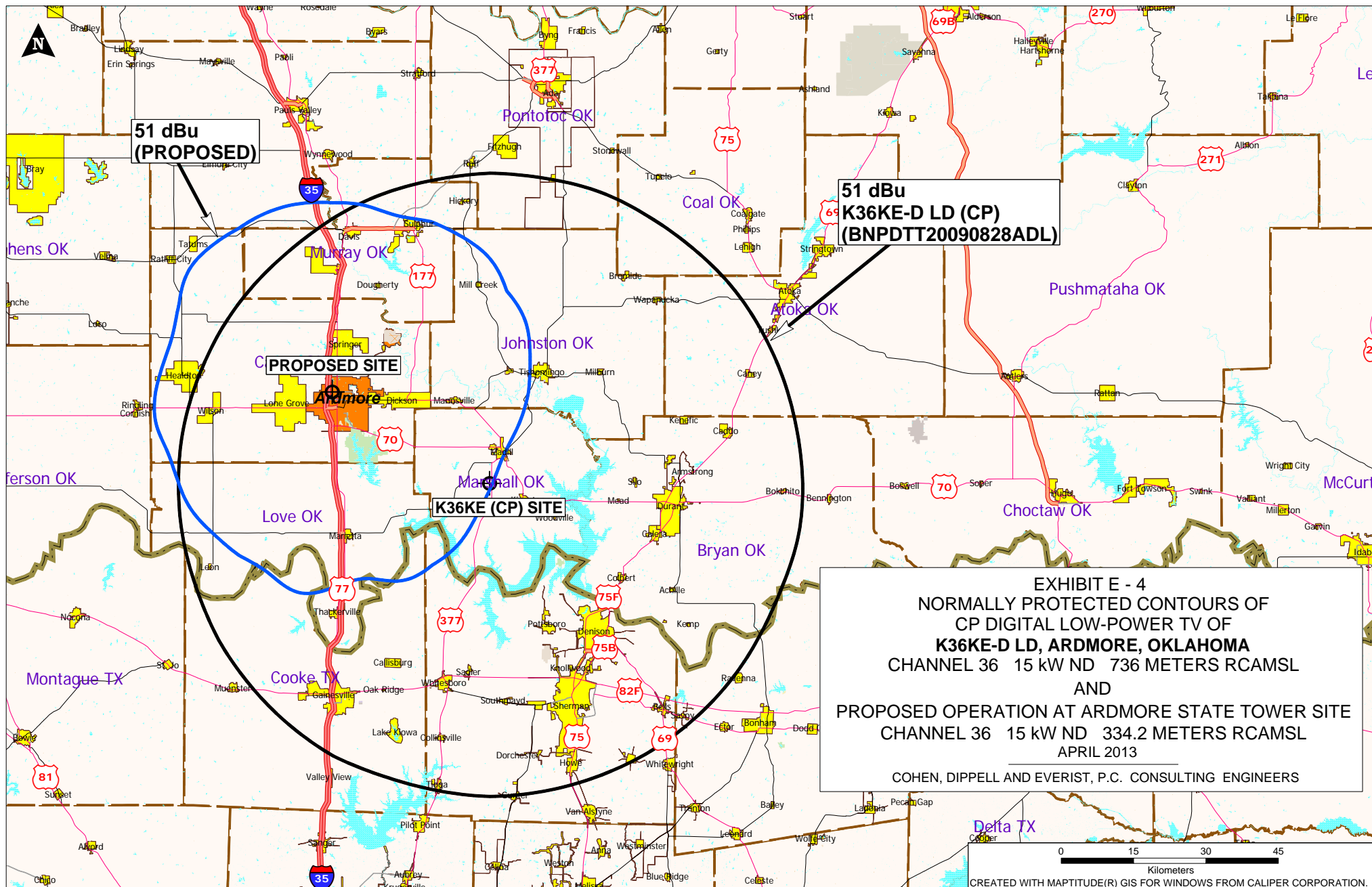


Figure B-2 RD8OM Antenna - Vertical Radiation Pattern at 593 MHz (typical)



COHEN, DIPPELL AND EVERIST, P.C.

TABLE II
LONGLEY-RICE INTERFERENCE
FOR THE OPERATION OF
ARDMORE, OKLAHOMA
CHANNEL 36 15 KW ERP 334.2 METERS RCAMSL
APRIL 2013

N 34° 12' 10"
W 97° 09' 12"

Simple Mask

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
34	KADY-LP	SHERMAN TX	77.5	LIC	BLTTL-20070503ABB	0.00%
35	K35CU	ADA OK	64.4	CP	BDFCDTT-20090821AAE	0.23%
35	K35CU	ADA OK	64.4	LIC	BLTT-19960111AG	No interference
35	K35LO-D	GERONIMO OK	118.3	CP	BNPDTL-20100510AKV	0.00%
35	KEGG-LP	MCALESTER OK	151.5	LIC	BLTT-20051017ABG	0.00%
35	KDFW	DALLAS TX	180.6	LIC	BLCDDT-20090508AAB	No interference
35	KJBO-LP	WICHITA FALLS TX	132.4	LIC	BLTTL-19900423JN	0.00%
36	KFFS-CD	FAYETTEVILLE AR	345.4	LIC	BLDTA-20121011ABO	No interference
36	K36MU-D	TEXARKANA AR	337.8	CP	BNPDTL-20101020AAM	No interference
36	K36II-D	JOPLIN MO	392.3	LIC	BLDTL-20101022ACG	No interference
36	KRSC-TV	CLAREMORE OK	281.6	LIC	BLEDT-20061011AAM	No interference
36	K36MV-D	ENID OK	270.8	CP	BNPDTL-20101027AAO	No interference
36	K36LC-D	ERICK OK	273.6	CP	BNPDTL-20100406ACL	No interference
36	K36AB-D	LAWTON OK	112.7	LIC	BLDTT-20091229ACY	0.06%
36	K36LS-D	MULDROW OK	269.8	CP	BNPDTL-20100505AJX	No interference
36	KUOK-CD	OKLAHOMA CITY OK	138.6	APP	BSTA-20101108AAV	No interference
36	KUOK-CD	OKLAHOMA CITY OK	138.5	CP	BPTTA-20100223AEC	No interference
36	KUOK-CD	OKLAHOMA CITY OK	138.6	LIC	BLDTA-20110128AAA	No interference
36	K36IY-D	WEATHERFORD OK	203.1	LIC	BLDTT-20100225ABI	No interference
36	K36LD-D	COLLEGE STATION TX	402	CP	BNPDTL-20100119AEB	0.00%
36	KDFI	DALLAS TX	185.3	LIC	BLCDDT-20081027AAS	0.00%
36	KLGV-LP	LONGVIEW TX	298	CP MO	BMPDTL-20120217ABN	No interference
36	KLGV-LP	LONGVIEW TX	298	LIC	BLTTL-20070718AEU	No interference
36	K36CA-D	MEMPHIS TX	323	LIC	BLDTT-20100402ACP	No interference
36	K36MA-D	PERRYTON TX	394	LIC	BLDTT-20120622ADK	0.00%

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II
LONGLEY-RICE INTERFERENCE
FOR THE OPERATION OF
ARDMORE, OKLAHOMA
CHANNEL 36 15 KW ERP 334.2 METERS RCAMSL
APRIL 2013

N 34° 12' 10"
W 97° 09' 12"

Simple Mask

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
36	K36HF	TUSCOLA TX	318.8	LIC	BLTTL-20070613ADK	No interference
44	K44BQ	ARDMORE OK	27.4	APP	BSTA-20121029AAF	No interference
44	K44BQ	ARDMORE OK	27.4	LIC	BLTT-19900823II	No interference

Section III - Engineering (Digital)

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: 36

2. Translator Input Channel No. _____

3. Station proposed to be rebroadcast:

Call Sign	City	State	Channel
-----------	------	-------	---------

4. Antenna Location Coordinates: (NAD 27)

34 ° 12 ' 10 " ☒ N ☐ S Latitude
97 ° 09 ' 12 " ☐ E ☒ W Longitude

5. Antenna Structure Registration Number: _____

☐

Not applicable

See Explanation
in Exhibit No.

☒

FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 268.8 meters

7. Overall Tower Height Above Ground Level: 68.9 meters

8. Height of Radiation Center Above Ground Level: 65.4 meters

9. Maximum Effective Radiated Power (ERP): 15 kW

10. Transmitter Output Power: 1.429 kW

11. a. Transmitting Antenna: ☒ Nondirectional ☐ Directional ☐ Directional composite

Manufacturer
RFS

Model

b. Electrical Beam Tilt: 0.5 degrees ☐ Not applicable

c. Directional Antenna Relative Field Values:

Rotation: _____ ° ☐ No rotation ☒ N/A (Nondirectional)

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											

- d. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt? ☐ Yes ☒ No

If Yes, attach an Exhibit (see instructions for details).

Exhibit No.

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

12. **Out-of-Channel Emission Mask:** Simple ☒ Stringent ☐ Full Service ☐

CERTIFICATION

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030. ☒ Yes ☐ No

See Explanation in Exhibit No.
14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radio frequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. **An Exhibit is required.** ☒ Yes ☐ No

See Explanation in Exhibit No.

Exhibit No.

By checking "Yes" above, 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.

PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.

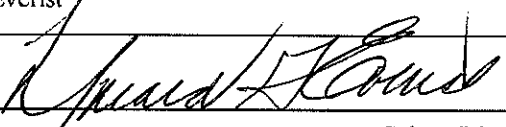
15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

- ☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.
- ☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- ☐ Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.
- ☐ Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.
- ☐ Pursuant to Section 74.786(e), an applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

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 Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date April 11, 2013	
Mailing Address Cohen, Dippell and Everist, P.C. 1420 N Street, NW, Suite One			
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).