

ENGINEERING STATEMENT  
APPLICATION FOR MODIFICATION OF  
OUTSTANDING CONSTRUCTION PERMIT  
FCC FILE NO. BDFCDTA-20100831AAI  
AN EXISTING CLASS A STATION  
KTMJ-CA, TOPEKA, KANSAS  
CHANNEL 43 15 KW MAX DA ERP 516.8 METERS RC/AMSL

MARCH 2012

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         )

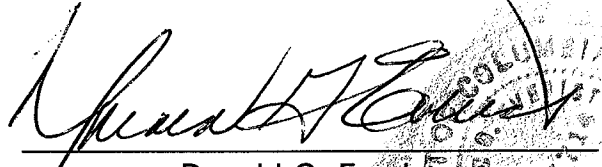
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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;

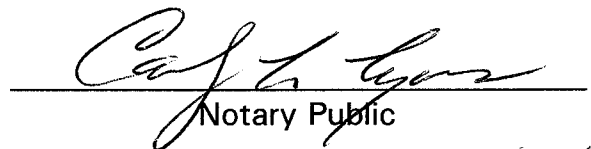
That his qualifications are a matter of record in the Federal Communications Commission;

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 1<sup>st</sup> day of March, 2012.

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

My Commission Expires: 2/28/2013



### Introduction

This engineering statement accompanied a request for modification of construction permit and has been prepared on behalf of NT Topeka Licensee LLC, licensee of Class A television station KTMJ-CA, Topeka, Kansas. This engineering statement accompanies an application for modification of the facilities as authorized by the outstanding construction permit (FCC File No. BDFCDTA-20100831AAI) for DTV operation as a “flashcut” on the currently licensed analog channel 43. Simultaneously, a request for special temporary authority is being submitted. The facilities authorized are for a DTV operation with an effective radiated power (“ERP”) of 15 kW directional at a radiation center above mean sea level (“RCAMSL”) of 516.8 meters. The analog operation has been terminated.

### Transmitter Site

A directional antenna is utilized and no significant alteration of the tower was required. The existing tower is located 301 NW Wanamaker Road, Topeka, Kansas. There is no change in transmitter site. The geographic coordinates of the site follow below.

North Latitude: 39° 03' 50"

West Longitude: 95° 45' 49"

NAD-27

### Equipment Data

Transmitter: Type-approved

Transmission Line: ERI, Type HJ8-50A, 3-1/8”, flexible coaxial  
air heliax, 199 meters (654 feet) with 53.1%  
efficiency or equivalent  
[0.42 dB loss/100 ft on Ch.43]

Antenna: ERI, Model ALP32L3-HSER-43 with maximum gain of 61.6 (17.90 dB) and 0.75° electrical beam tilt (no mechanical tilt) or equivalent; extended cardioid azimuth pattern, reduced rear, oriented towards N 275° E, true

Emission Mask: Stringent

Power Data

Transmitter Power Output ("TPO") Includes filter:	0.458 kW	-3.392 dBk
Transmission Line Efficiency/Loss:	53.1%	2.747 dB
Input Into Antenna:	0.243 kW	-6.139 dB
Antenna Gain:	61.62	17.9 dB
ERP:	15.0 kW	11.76 dBk

Elevation Data

Elevation of site above mean sea level	329.0 meters (1079.4 feet)
Center of radiation of antenna above ground level	187.8 meters (616 feet)
Center of radiation of antenna above mean sea level	516.8 meters (1695.4 feet)
Overall height above ground of antenna including appurtenances	285.7 meters (937.3 feet)
Overall height above mean sea level of tower including appurtenances	614.7 meters (2016.7 feet)

Slight differences may result due to conversion to metric

The Antenna Structure Registration Number ("ASRN") for the existing tower is 1032651. A tower sketch has been included as Exhibit E-1.

As indicated above, the transmitter with typical power output of 0.458 kW will deliver 0.243 kW to the input of the antenna. The antenna, having a maximum gain of 61.62 and an electrical beam tilt of  $0.75^{\circ}$  produces maximum ERP of 15 kW. The antenna elevation pattern data are included as Exhibit E-2. Exhibit E-3 provides the predicted coverage within the normally protected contour.

#### Interference Analysis

A study of predicted interference caused by the proposed KTMJ-CA low-power digital 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](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. 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 KTMJ-CA

Class A digital facilities and all relevant stations listed in the FCC data base as of March 1, 2012.

The study results and the included stations are listed in Table I.

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 directional operation will utilize a ERI, Type ALP32L3-HSER-43 antenna (or equivalent) described above with a center of radiation above ground of 187.8 meters. The proposed antenna is side-mounted on a steel lattice tower with an overall height of 285.7 meters above ground.

As previously indicated, there is one AM station located within 3.2 km of the proposed tower site. Since there will be no change in height, the electrical characteristic at the AM frequencies will be unchanged. According to the FCC database, there are also two FM stations, one DTV station, and one digital low-power station located within 100 meters of the KTWU-DT tower. Access to the tower property is prevented by a security fence with a locked gate.

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 radiofrequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. The elevation pattern for the ERI, ALP32L3-HSER-43, antenna, Exhibit E-2, shows a maximum relative field of less than 0.27 toward the ground (30° to 90° below the horizontal). Calculation according to OET

Bulletin 65 predicts a maximum RFF power density of less than  $1.1 \mu\text{W}/\text{cm}^2$ , 2 meters above ground or less than 0.32% of the uncontrolled Maximum Permissible Exposure (“MPE”) guideline.

For completeness, the contribution by facilities located within 100 meters to the electromagnetic field environment is considered herein, as there are multiple emitters in the area. The RFF study will also consider the following stations:

The RFF contribution of each station will be calculated using the following basic formula:

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

where:

S = power density in  $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for DTV Stations

ERP =  $[0.4 \text{ ERP}_V + \text{ERP}_A]$  for NTSC Stations

ERP<sub>V</sub> = peak visual ERP in watts

ERP<sub>A</sub> = RMS aural ERP in watts

ERP = ERP (horizontally polarized) + ERP (vertically polarized)

### **KTWU DTV Facility**

Channel 11	Freq:	198-204 MHz range
	ERP =	76 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	272.6 meters

$$S = \frac{33.4(F^2) \text{ Tot ERP}}{\text{Tot ERP} = 76 \text{ kW (Horizontal Only)}}$$

$$R^2 \quad R = 272.6 \text{ meters}$$

$$F = 0.1 \text{ (from manufacturer's data)}$$

$$S = < 0.34 \mu\text{W}/\text{cm}^2$$

Therefore, KTWU-DT contributes less than  $0.4 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for a uncontrolled environment for this frequency is  $200 \mu\text{W}/\text{cm}^2$ .

**KTWU-DT contributes less than 0.2% RFF level for a uncontrolled environment two meters above the ground.**

#### **KTOP(FM) FM Facility**

Channel 275C2	Freq:	102.9 MHz
	ERP =	30 kW
	Polarization =	Circular
	RCAGL -2 meters =	149.5 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 60 \text{ kW (H+V)}$$

$$R = 149.5 \text{ meters}$$

$$F = 0.3 \text{ (assumed value)}$$

$$S = < 9 \mu\text{W}/\text{cm}^2$$

Therefore, KTOP(FM) contributes less than  $9 \mu\text{W}/\text{cm}^2$  at 2 meters above the ground.

The limit for a uncontrolled environment is  $200 \mu\text{W}/\text{cm}^2$  for the FM band range.

**KTOP(FM) contributes less than 5% RFF level for a uncontrolled environment two meters above the ground.**

#### **KWIC(FM) FM Facility**

Channel 257C3	Freq:	99.3 MHz
	ERP =	6.8 kW
	Polarization =	Circular
	RCAGL -2 meters =	134 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 13.6 \text{ kW (Horizontal and Vertical)}$$



$$R^2 \quad R = 134 \text{ meters}$$

$$F = 0.3 \text{ (assumed value)}$$

$$S = < 3 \mu\text{W}/\text{cm}^2$$

Therefore, KWIC(FM) contributes less than  $3 \mu\text{W}/\text{cm}^2$  at 2 meters above the ground.

The limit for an uncontrolled environment is  $200 \mu\text{W}/\text{cm}^2$  for the FM band range.

**KWIC(FM) contributes less than 1.5% RFF level for a uncontrolled environment two meters above the ground.**

#### K40IJ-D Digital Low Power

Channel 40	Freq:	626-632 MHz range
	ERP =	5.0 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	188.5 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 5.0 \text{ kW (Horizontal Only)}$$

$$R = 188.5 \text{ meters}$$

$$F = 0.4 \text{ (assumed value)}$$

$$S = < 0.8 \mu\text{W}/\text{cm}^2$$

Therefore, K40IJ-D contributes less than  $0.8 \mu\text{W}/\text{cm}^2$  at 2 meters above ground.

The limit for a uncontrolled environment for this frequency is  $417.3 \mu\text{W}/\text{cm}^2$ .

**K40IJ-D contributes less than 0.2% RFF level for a uncontrolled environment two meters above the ground.**

#### KTMJ-CA Digital Facility Proposed

Channel 43	Freq:	644-650 MHz range
	ERP =	15.0 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	185.8 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 15 \text{ kW (Horizontal Only)}$$

$$R^2$$

$$R = 185.8 \text{ meters}$$

$$F = 0.27 \text{ (manufacturer's data)}$$

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

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

The limit for a uncontrolled environment for this frequency is  $429.3 \mu\text{W}/\text{cm}^2$ .

**KTMJ contributes less than 0.5% RFF level for a uncontrolled environment two meters above the ground.**

Therefore, the calculated total RFF contribution of the five stations above is less than seven percent (7%) of the uncontrolled MPE. 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

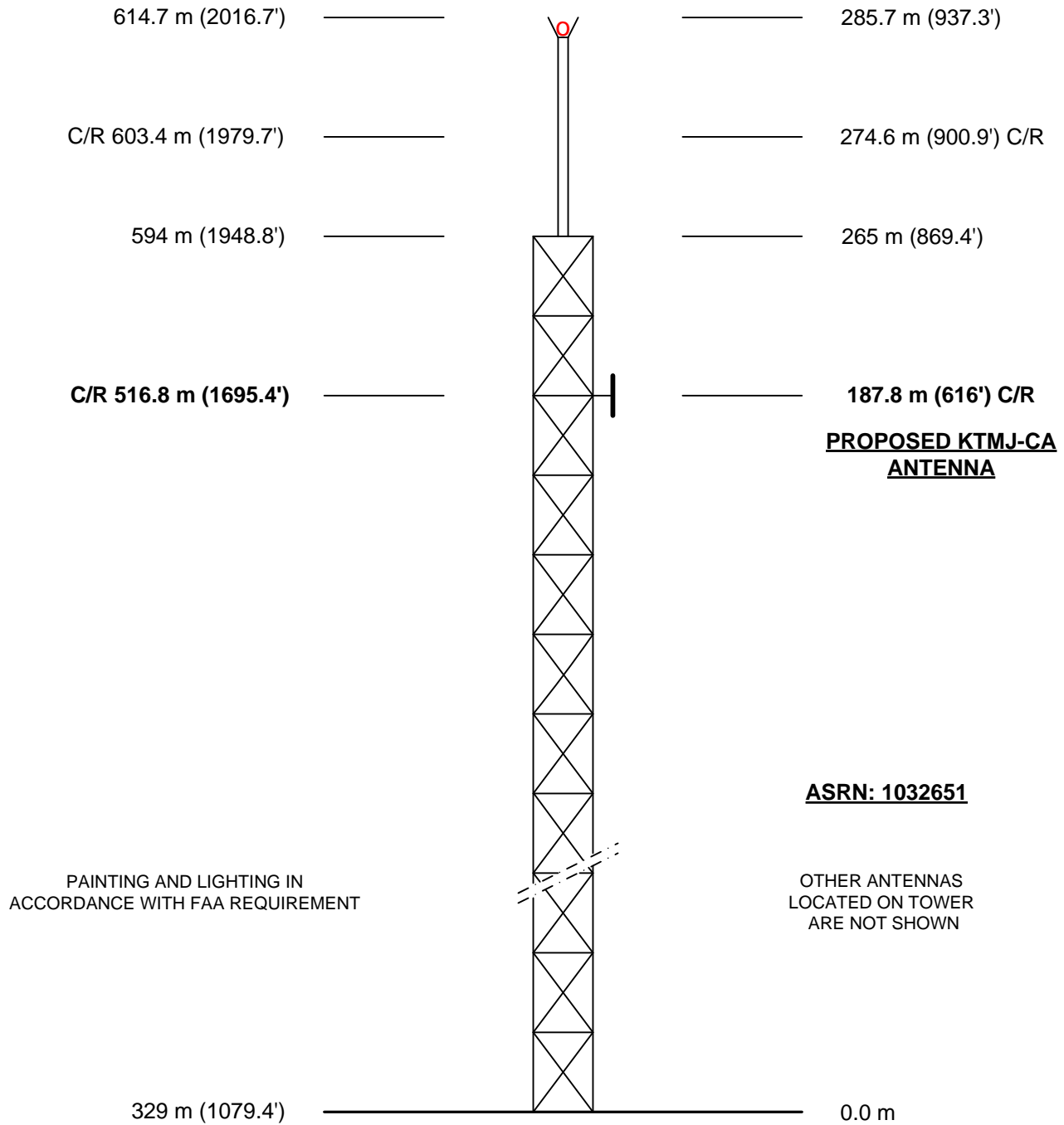
An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the permittee indicates:

- (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 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



( NOT TO SCALE)

EXHIBIT E - 1  
VERTICAL SKETCH  
MODIFICATION OF CONSTRUCTION PERMIT  
FOR PROPOSED DIGITAL OPERATION OF  
**KTMJ-CA, TOPEKA, KANSAS**

MARCH 2012

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers Washington, D.C.

COHEN, DIPPELL AND EVERIST, P.C.

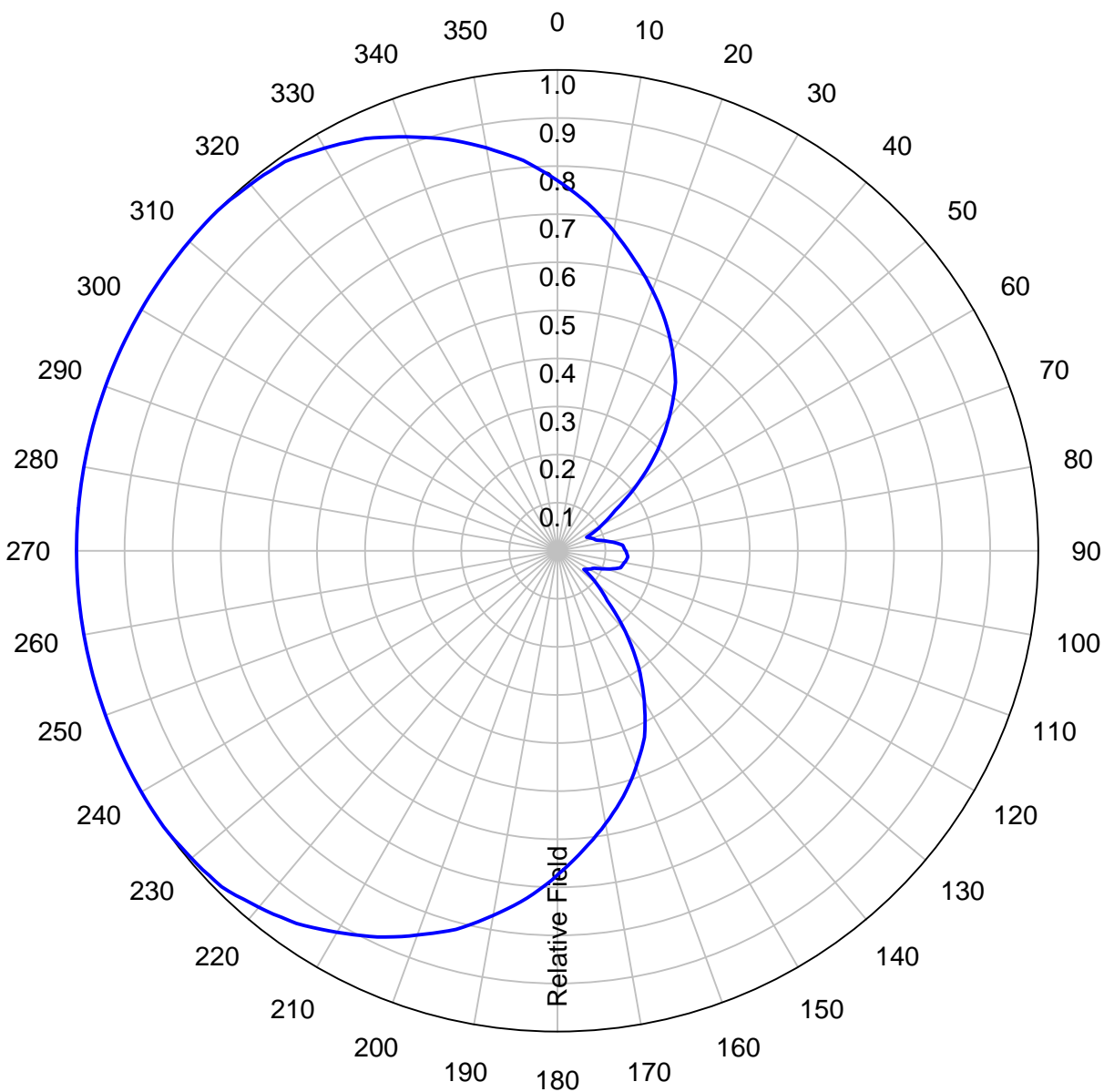
EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KTMJ-CA, TOPEKA, KANSAS

**AZIMUTH PATTERN****Type:****ALP-ER****Directivity:****Numeric****1.93****dBd****2.86****Peak(s) at:****Channel:****43****Location:****Topeka, KS****Polarization:****Horizontal**

Note: Pattern shape and directivity may vary with channel and mouting configuration.



*Preliminary, subject to final design and review.*

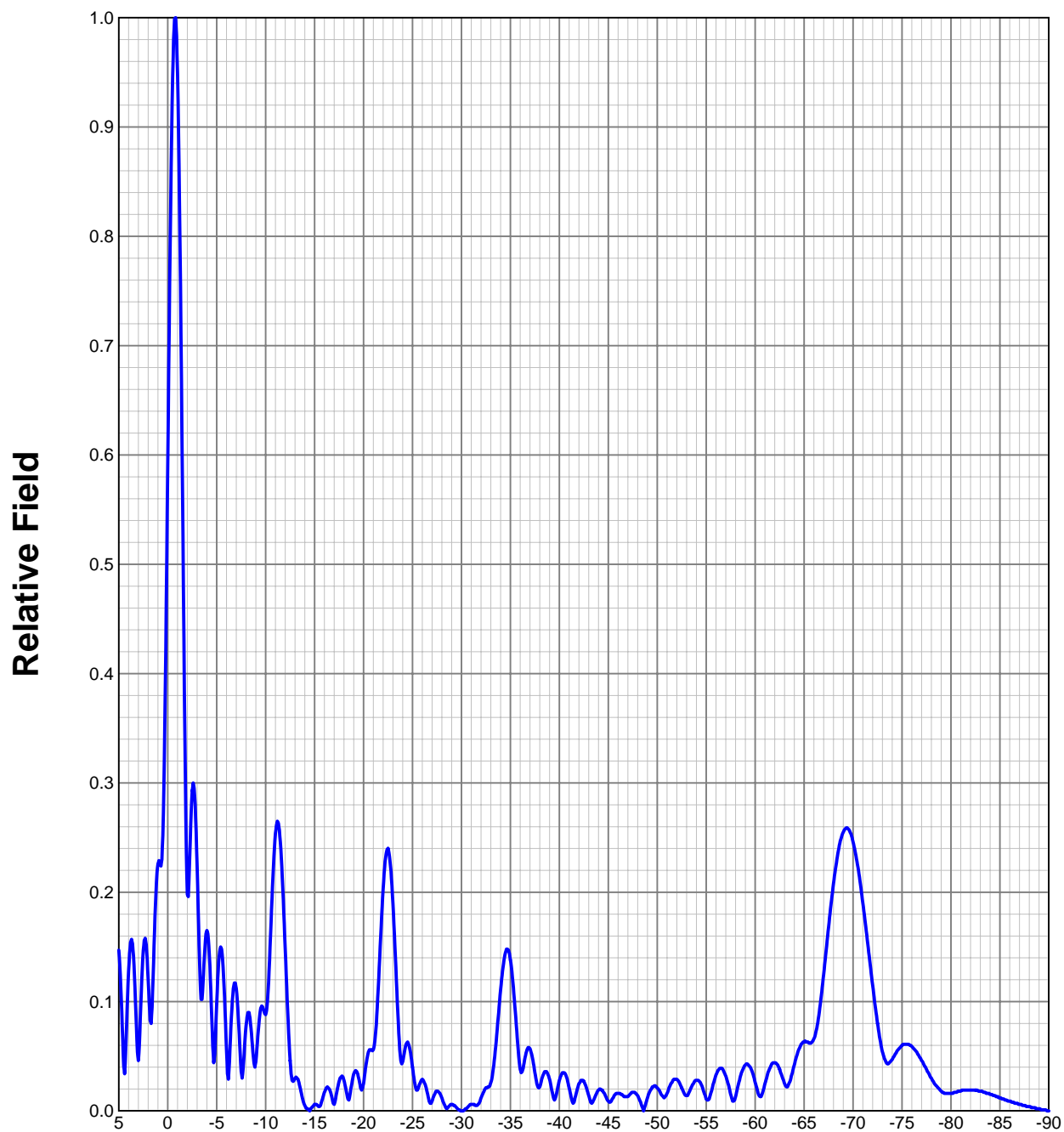
## **TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT**

Type: ALP-ER

PolarizationHorizontal

ANGLE	FIELD	ERP (kW)	ERP (dBk)
0	0.770	8.893	9.491
10	0.675	6.834	8.347
20	0.577	4.994	6.984
30	0.479	3.442	5.368
40	0.361	1.955	2.911
50	0.219	0.719	-1.430
60	0.106	0.169	-7.733
70	0.076	0.087	-10.623
80	0.110	0.181	-7.411
90	0.142	0.302	-5.193
100	0.141	0.298	-5.255
110	0.111	0.185	-7.333
120	0.076	0.087	-10.623
130	0.106	0.169	-7.733
140	0.220	0.726	-1.391
150	0.361	1.955	2.911
160	0.478	3.427	5.349
170	0.576	4.977	6.969
180	0.674	6.814	8.334
190	0.770	8.893	9.491
200	0.850	10.837	10.349
210	0.916	12.586	10.999
220	0.967	14.026	11.469
230	0.994	14.820	11.709
240	1.000	15.000	11.761
250	1.000	15.000	11.761
260	1.000	15.000	11.761
270	1.000	15.000	11.761
280	1.000	15.000	11.761
290	1.000	15.000	11.761
300	1.000	15.000	11.761
310	1.000	15.000	11.761
320	0.994	14.820	11.709
330	0.967	14.026	11.469
340	0.916	12.586	10.999
350	0.851	10.863	10.359

*Preliminary, subject to final design and review.*

**ELEVATION PATTERN****Type:****ALP32L3****Channel:****43****Directivity:****Numeric****dBd****Location:****Topeka, KS****Main Lobe:****31.93****15.04****Beam Tilt:****-0.75****Horizontal:****11.15****10.47****Polarization:****Horizontal**

*Preliminary, subject to final design and review.*



## TABULATED DATA FOR ELEVATION PATTERN

Type: ALP32L3

PolarizationHorizontal

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.147	-16.65	-6.75	0.115	-18.82	-27.00	0.009	-40.92	-50.50
4.75	0.103	-19.74	-7.00	0.112	-19.02	-27.50	0.018	-34.89	-51.00
4.50	0.041	-27.74	-7.25	0.079	-22.10	-28.00	0.012	-38.42	-51.50
4.25	0.067	-23.54	-7.50	0.036	-28.87	-28.50	0.002	-53.98	-52.00
4.00	0.128	-17.86	-7.75	0.045	-26.94	-29.00	0.006	-44.44	-52.50
3.75	0.156	-16.17	-8.00	0.078	-22.16	-29.50	0.003	-50.46	-53.00
3.50	0.142	-16.95	-8.25	0.090	-20.92	-30.00	0.000	-40.00	-53.50
3.25	0.089	-21.06	-8.50	0.076	-22.38	-30.50	0.002	-53.98	-54.00
3.00	0.046	-26.74	-8.75	0.049	-26.20	-31.00	0.006	-44.44	-54.50
2.75	0.098	-20.22	-9.00	0.045	-26.94	-31.50	0.005	-46.02	-55.00
2.50	0.147	-16.65	-9.25	0.074	-22.67	-32.00	0.012	-38.42	-55.50
2.25	0.155	-16.19	-9.50	0.094	-20.54	-32.50	0.021	-33.56	-56.00
2.00	0.120	-18.42	-9.75	0.094	-20.58	-33.00	0.026	-31.70	-56.50
1.75	0.082	-21.78	-10.00	0.088	-21.11	-33.50	0.059	-24.58	-57.00
1.50	0.121	-18.34	-10.50	0.161	-15.86	-34.00	0.111	-19.09	-57.50
1.25	0.190	-14.45	-11.00	0.254	-11.90	-34.50	0.145	-16.77	-58.00
1.00	0.226	-12.92	-11.50	0.246	-12.18	-35.00	0.138	-17.20	-58.50
0.75	0.225	-12.96	-12.00	0.148	-16.59	-35.50	0.091	-20.82	-59.00
0.50	0.252	-11.97	-12.50	0.046	-26.74	-36.00	0.038	-28.40	-59.50
0.25	0.388	-8.22	-13.00	0.030	-30.46	-36.50	0.049	-26.20	-60.00
0.00	0.591	-4.57	-13.50	0.022	-33.15	-37.00	0.057	-24.88	-60.50
-0.25	0.795	-1.99	-14.00	0.005	-46.02	-37.50	0.035	-29.12	-61.00
-0.50	0.946	-0.48	-14.50	0.000	-40.00	-38.00	0.022	-33.15	-61.50
-0.75	1.000	0.00	-15.00	0.006	-44.44	-38.50	0.036	-28.87	-62.00
-1.00	0.949	-0.45	-15.50	0.004	-47.96	-39.00	0.029	-30.75	-62.50
-1.25	0.794	-2.01	-16.00	0.017	-35.39	-39.50	0.010	-40.00	-63.00
-1.50	0.574	-4.82	-16.50	0.020	-33.98	-40.00	0.028	-31.06	-63.50
-1.75	0.343	-9.29	-17.00	0.006	-44.44	-40.50	0.035	-29.12	-64.00
-2.00	0.198	-14.07	-17.50	0.027	-31.37	-41.00	0.021	-33.56	-64.50
-2.25	0.234	-12.62	-18.00	0.028	-31.06	-41.50	0.008	-41.94	-65.00
-2.50	0.293	-10.66	-18.50	0.010	-40.00	-42.00	0.025	-32.04	-65.50
-2.75	0.287	-10.83	-19.00	0.034	-29.37	-42.50	0.027	-31.37	-66.00
-3.00	0.224	-13.00	-19.50	0.030	-30.46	-43.00	0.014	-37.08	-66.50
-3.25	0.137	-17.30	-20.00	0.025	-32.04	-43.50	0.010	-40.00	-67.00
-3.50	0.102	-19.83	-20.50	0.054	-25.35	-44.00	0.019	-34.42	-67.50
-3.75	0.142	-16.95	-21.00	0.056	-25.04	-44.50	0.017	-35.39	-68.00
-4.00	0.165	-15.65	-21.50	0.112	-19.02	-45.00	0.009	-40.92	-68.50
-4.25	0.142	-16.95	-22.00	0.203	-13.85	-45.50	0.012	-38.42	-69.00
-4.50	0.084	-21.51	-22.50	0.240	-12.40	-46.00	0.016	-35.92	-69.50
-4.75	0.048	-26.38	-23.00	0.190	-14.42	-46.50	0.014	-37.08	-70.00
-5.00	0.098	-20.18	-23.50	0.090	-20.92	-47.00	0.013	-37.72	-70.50
-5.25	0.141	-17.02	-24.00	0.045	-26.94	-47.50	0.017	-35.39	-71.00
-5.50	0.148	-16.59	-24.50	0.063	-24.01	-48.00	0.014	-37.08	-71.50
-5.75	0.114	-18.86	-25.00	0.040	-27.96	-48.50	0.003	-50.46	-72.00
-6.00	0.056	-25.04	-25.50	0.019	-34.42	-49.00	0.012	-38.42	-72.50
-6.25	0.037	-28.64	-26.00	0.029	-30.75	-49.50	0.022	-33.15	-73.00
-6.50	0.086	-21.31	-26.50	0.017	-35.39	-50.00	0.021	-33.56	-73.50

Preliminary, subject to final design and review.

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I  
LONGLEY-RICE INTERFERENCE  
FOR THE MODIFICATION OF CONSTRUCTION PERMIT FOR  
KTMJ-CA, TOPEKA, KANSAS  
CHANNEL 43 15 KW MAX ERP 516.8 METERS RCAMSL  
MARCH 2012

Stringent Mask

N 39° 03' 50"

W 95° 45' 49"

NAD-27

<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>
35	KCDN-LP	KANSAS CITY MO	110.3	LIC	BLTTL-19970905JE	0.00%
42	K42JH-D	ENTERPRISE KS	118.6	CP	BNPDTL-20090825BNL	0.00%
42	KSHB-TV	KANSAS CITY MO	106.6	PLN	DTVPLN-DTVPLN59444	0.00%
42	KSHB-TV	KANSAS CITY MO	106.6	LIC	BLCDDT-20110421AAQ	0.06%
43	NEW	QUINCY IL	393.5	APP	BNPDTL-20101015AAE	0.00%
43	K43NX-D	SALINA KS	158.5	CP	BNPDTL-20100930ARM	0.01%
43	KCTU-LD	WICHITA KS	205.7	LIC	BLDTL-20091207ADJ	No interference
43	K43ND-D	COLUMBIA MO	301.8	CP	BNPDTL-20100423ACD	No interference
43	KODE-TV	JOPLIN MO	245.5	PLN	DTVPLN-DTVPLN18283	No interference
43	KODE-TV	JOPLIN MO	245.5	LIC	BLCDDT-20090424ABE	No interference
43	KCDN-LP	KANSAS CITY MO	108	CP	BDFCDTL-20110329AAX	0.01%
43	KCDN-LP	KANSAS CITY MO	108	CP	BDISTTL-20080703ABI	No interference
43	K43ML-D	KIRKSVILLE MO	299.5	CP	BNPDTL-20090825BQZ	No interference
43	K43NV-D	HASTINGS NE	281.7	CP	BNPDTL-20100930ARE	No interference
43	KPTM	OMAHA NE	226.5	APP	BMPCDDT-20040609AAB	0.00%
43	KPTM	OMAHA NE	226.5	PLN	DTVPLN-DTVPLN51491	0.00%
43	KPTM	OMAHA NE	226.5	LIC	BLCDDT-20051107AFO	0.00%
44	WIBW-TV	TOPEKA KS	25.5	LIC	BLCDDT-20100505AHK	0.26%

TABLE II  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED MODIFICATION OF CONSTRUCTION PERMIT FOR  
KTMJ-CA, TOPEKA, KANSAS  
CHANNEL 43 15 KW ERP 516.8 METERS RCMSL  
MARCH 2012

<u>Radial</u>	<u>Average*</u>			<u>ERP At</u>	<u>Distance to Contour</u>
<u>Bearing</u>	<u>Elevation</u>	<u>Effective</u>	<u>Depression</u>	<u>Radio</u>	<u>F(50/90)</u>
<u>(N ° E, T)</u>	<u>3.2 to 16.1 km</u>	<u>Height</u>	<u>Angle</u>	<u>Horizon</u>	<u>51 dBu</u>
	<u>meters</u>	<u>meters</u>	<u>degrees</u>	<u>kW</u>	<u>km</u>
0	294.2	222.6	0.413	8.894	48.4
10	307.0	209.8	0.401	6.834	46.3
20	293.4	223.4	0.414	4.994	45.5
30	293.5	223.3	0.414	3.442	43.6
40	289.1	227.7	0.418	1.955	40.9
50	285.6	231.2	0.421	0.719	35.8
60	281.7	235.1	0.425	0.169	28.2
70	276.4	240.4	0.429	0.087	25.0
80	264.2	252.6	0.440	0.182	29.5
90	267.7	249.1	0.437	0.302	32.1
100	278.4	238.4	0.428	0.298	31.5
110	289.9	226.9	0.417	0.185	28.3
120	296.7	220.1	0.411	0.087	24.1
130	303.0	213.8	0.405	0.169	27.2
140	304.8	212.0	0.403	0.726	34.8
150	304.2	212.6	0.404	1.955	40.1
160	312.8	204.0	0.396	3.427	42.5
170	323.9	192.9	0.385	4.977	43.8
180	327.0	189.8	0.382	6.814	45.2
190	324.8	192.1	0.384	8.894	46.7
200	328.3	188.5	0.380	10.838	47.5
210	335.6	181.2	0.373	12.586	47.8
220	344.0	172.8	0.364	14.026	47.9
230	330.7	186.1	0.378	14.821	48.9
240	305.4	211.4	0.403	15.0	50.5
250	313.2	203.6	0.395	15.0	50.0
260	299.6	217.2	0.408	15.0	50.8
270	290.5	226.4	0.417	15.0	51.3
280	279.2	237.6	0.427	15.0	52.0

TABLE II  
COMPUTED COVERAGE DATA  
FOR THE PROPOSED MODIFICATION OF CONSTRUCTION PERMIT FOR  
KTMJ-CA, TOPEKA, KANSAS  
CHANNEL 43 15 KW ERP 516.8 METERS RCAMSL  
MARCH 2012

<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>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour</u> <u>F(50/90)</u> <u>51 dBu</u> km
290	276.9	239.9	0.429	15.0	52.1
300	281.5	235.3	0.425	15.0	51.9
310	297.9	218.9	0.410	15.0	50.9
320	297.4	219.4	0.410	14.821	50.9
330	291.4	225.4	0.416	14.026	50.9
340	288.7	228.1	0.418	12.586	50.5
350	289.6	227.2	0.418	10.863	49.7

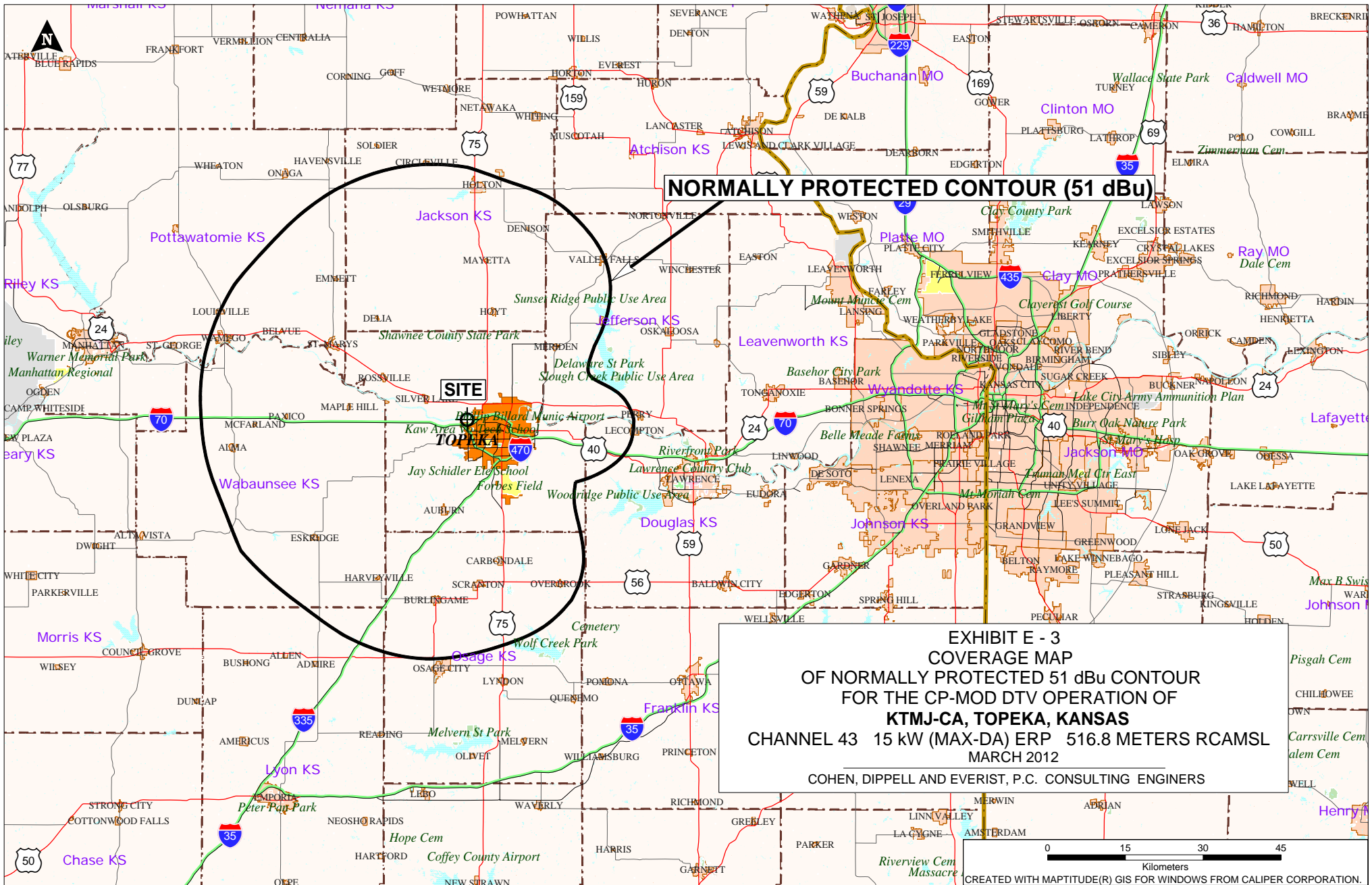
\*Based on data from FCC 3-second data base

DTV Channel 43 (644-650 MHz)  
Average Elevation 3.2 to 16.1 km 299.1 meters AMSL  
Center of Radiation 516.8 meters AMSL  
Antenna Height Above Average Terrain 215.04 meters  
Effective Radiated Power 15 kW (11.76 dBk) Max.

"

North Latitude: 39° 03' 50"  
West Longitude: 95° 45' 49"

(NAD-27)



Section III - Engineering (Digital)

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. All items must be completed. The response "on file" is not acceptable.

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.

TECH BOX

1. Channel: \_\_\_\_\_

2. Antenna Location Coordinates: (NAD 27)

° ' "

° ' "

☐ N☐ S Latitude

☐ E☐ W Longitude

3. Antenna Structure Registration Number: \_\_\_\_\_

☐ Not applicable

See Explanation in Exhibit No.

☐ FAA Notification Filed with FAA

4. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters

5. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters

6. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters

7. Maximum Effective Radiated Power (ERP): \_\_\_\_\_ kW

8. Transmitter Output Power: \_\_\_\_\_ kW

9. a. Transmitting Antenna: ☐ Nondirectional☐ Directional "Off-the-shelf"☐ Directional composite

Manufacturer

Model

b. Electrical Beam Tilt: \_\_\_\_\_ 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.

10. Out-of-channel Emission Mask: Simple ☐ Stringent ☐ Full Service ☐

# CERTIFICATION

KTMJ-CA Mod.

11. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 73.6016, 73.6017, 73.6018, 73.6019, 73.6020, 73.6027 and 74.794(b).

☒ Yes ☐ No

See Explanation  
in Exhibit No.

12. **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.

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.

Exhibit No.

E

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

☐ Yes ☐ No

See Explanation  
in Exhibit No.

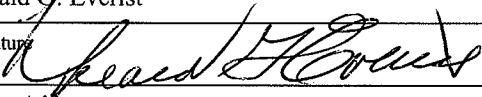
☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.

☐ Pursuant to Section 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.

Section

## 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 Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date 3/1/12	
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).