

ENGINEERING STATEMENT
RE DTV APPLICATION FOR CONSTRUCTION PERMIT
TO INCREASE EFFECTIVE RADIATED POWER
ON BEHALF OF
NVT WICHITA LICENSEE, LLC
KSNB-DT, GARDEN CITY, KANSAS
CHANNEL 11 56.8 KW ERP 239 METERS

JUNE 2009

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

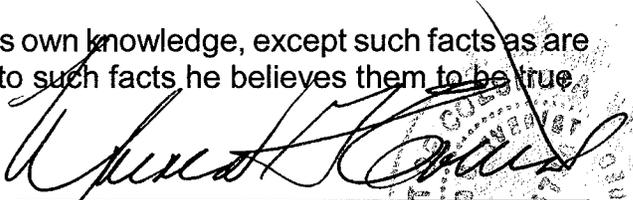
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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

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

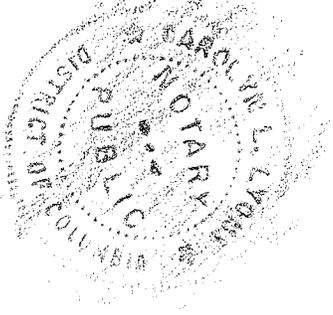
That the attached engineering report was prepared by him or under his supervision and direction and

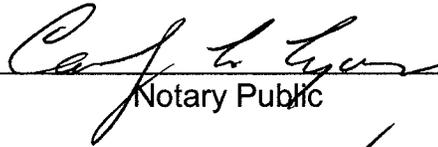
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



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

Subscribed and sworn to before me this 17th day of June, 2009.





Notary Public

My Commission Expires: 2/28/2013

This engineering statement has been prepared on behalf of NVT Wichita Licensee, LLC (“NVT”), licensee of KSNG(TV), Garden City, Kansas, in support of its request to construct DTV facilities for post-transition operation.

KSNG(TV) operated on NTSC television Channel 11 with a maximum visual ERP of 200 kW and an antenna height above average terrain (“HAAT”) of 244 meters (800.5 feet). NVT has licensed post-transition DTV facilities that operate with 7.4 kW non-directional ERP and HAAT of 239 meters. See FCC File Nos. BPCDT-20080401ASQ and BLCDT-20090612AAP. NVT proposes to construct DTV facilities of 56.8 kW non-directional ERP at a height above average terrain of 239 meters. This ERP and HAAT combination conforms to the requirements of Section 73.622(f)(7) of the FCC Rules.

Basis For Modification of Post-Transition Facilities and
Request for Expedited Processing

As has been the case with other of our client stations¹ transitioning to high VHF DTV channels, the technical staff of KSNG-DT indicates that the station is receiving numerous consumer reception complaints from viewers previously receiving the pre-transition analog Channel 11 signal. This reception shortfall is further evident based on the Washington Post article entitled, “*2 DC Stations Lost to Viewers in Digital TV Transition.*”²

¹The firm has informally discussed this development prior to NAB Convention, at the NAB Convention and subsequently with the OET staff

²See A-16, Washington Post dated Wednesday, June 17, 2009

Proposed Parameters

The KSNG-DT post-transition DTV antenna is top-mounted on an existing tower. The existing tower has a total overall structure height above ground of 255.1 meters (836.9 feet). The existing transmitter is located 12.6 miles South of Garden City, Kansas.

There is no proposed change in overall height and therefore an FAA aeronautical study is not required. The FCC antenna structure registration number of the existing tower is 1031276. Exhibit E-1 is a vertical sketch of the existing tower and top-mounted transmitting antenna.

The geographic coordinates of the existing site are as follows:

North Latitude: 37° 46' 40"

West Longitude: 100° 52' 08"

NAD-27

Equipment Data

Antenna: GE, Type TY-70H, 12-Bay Superturnstile antenna. The antenna elevation pattern and the associated tabulated data are included as Exhibits E-2.

Transmission Line: 24.4 meters (80 ft) of Dielectric Rigid, Type FL-77, 3-1/8", 50 ohm or equivalent, Attenuation 0.138 dB/100 ft

243.8 meters (800 ft) of Dielectric, Type FL-105, 4-1/8", 50 ohm or equivalent, Attenuation 0.14 dB/100 ft

Power Data

Transmitter Output after Filters	6.0 kW	7.78 dBk
Transmission Line Efficiency/Loss	75.1%	1.24 dB
Input Power to the Antenna	4.51 kW	6.54 dBk

Antenna Gain	12.6	11 dB
Effective Radiated Power	56.8 kW	17.54 dBk

Elevation Data

Vertical dimension of top-mounted Channel 11 antenna (including appurtenances)	23.8 meters 78 feet
Overall height above ground of antenna structure (including appurtenances)	255.1 meters 836.9 feet
Center of radiation of Channel 11 antenna above ground	234.2 meters 768.4 feet
Elevation of site above mean sea level	885.8 meters 2906.2 feet
Center of radiation of Channel 11 antenna above mean sea level	1120 meters 3674.5 feet
Overall height above mean sea level of tower (including beacon)	1140.9 meters 3743.1 feet
Antenna height above average terrain	239 meters

Note: Slight height differences may result due to conversion to metric.

Interference Analysis

A study of predicted interference (Table I) caused by the proposed KSNG-DT post-transition has been performed using a version of the Longley-Rice program as described in OET Bulletin No. 69 (February 6, 2004) and the Public Notice, "Additional Application Processing Guidelines for Digital Television (DTV)" (August 1998). The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Windows XP 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 km² using 3-second terrain data sampled approximately every 1.0 km at one degree azimuth intervals with 2000 census centroids. The results of the analysis predict that the proposed nondirectional post-transition operation of KSNG-DT will not cause any new interference to other identified potentially affected post-transition stations.

Coverage

The average elevation data for 3.2 to 16.1 km along each radial has been determined from the NGDC 3-second computerized terrain database. The F(50,90) DTV coverage contours have been computed from reference to the propagation data for Channels 7-13, as published by the FCC in Figure 10 and Figure 10a, Section 73.699 of the FCC Rules and Regulations. Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights, it is found that the depression angle, A_n , varies from 0.413 to 0.442 degrees.

Table II includes the distances to the F(50,90) 43 and 36 dBu coverage contours, the average elevation 3.2 to 16.1 km, and the antenna effective height for each radial spaced 45 degrees in azimuth. Exhibit E-3 provides a map of the computed coverage contours.

Additional Broadcast Facilities

There are no AM stations located within 3.2 km of the existing tower site. There are no FM, NTSC or DTV television stations, other than the KSNG-DT facilities, located within 0.5 km of the transmitting site.

FCC Rule, Section 1.1307

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 following equations from OET Bulletin No. 65 have been used to calculate the predicted radiofrequency fields at 2 meters above ground at the base of the tower:

Digital Television Broadcast Stations

$$S = [(33.4)(F^2)(ERP^2)]/R^2$$

S = Power Density in Microwatts/sq. cm ($\mu\text{W}/\text{cm}^2$)

F = Relative Field Factor in the downward direction of interest (-60° to -90° elevation)

ERP_V = Total Peak Visual ERP in Watts

ERP_A = Total Aural ERP in Watts

ERP = Power in Watts

R = Distance from 2 meters above ground to center of radiation in meters

<u>Station</u>	<u>Statuts</u>	<u>ERP</u> (kW)	<u>Frequency</u> (MHz)	<u>Ch</u>	<u>RCAGL</u> (m)	<u>Relative</u> <u>Field</u>	<u>S</u> ($\mu\text{W}/\text{cm}^2$)	<u>RFF</u> (%)
KSNG-DT	Proposed	56.8	198-204	11	234.2	0.3	3.1	1.5

For the post-transition operation, KSNG-DT proposes to use the existing top-mounted GE Type TY-70H, 12-Bay Superturnstile (or equivalent). Using a conservative relative field factor of 0.3 based on the antenna elevation pattern and the procedures outlined in OET Bulletin 65, the maximum RFF resulting from the proposed operation is less than $5 \mu\text{W}/\text{cm}^2$. This is less than 2.5% of the $200 \mu\text{W}/\text{cm}^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

The contribution of the proposed post-transition operation of KSNG-DT at 2 meters above ground level is less than 2.5% of the current FCC guidelines for maximum permissible exposure (“MPE”) for the general population/uncontrolled 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.

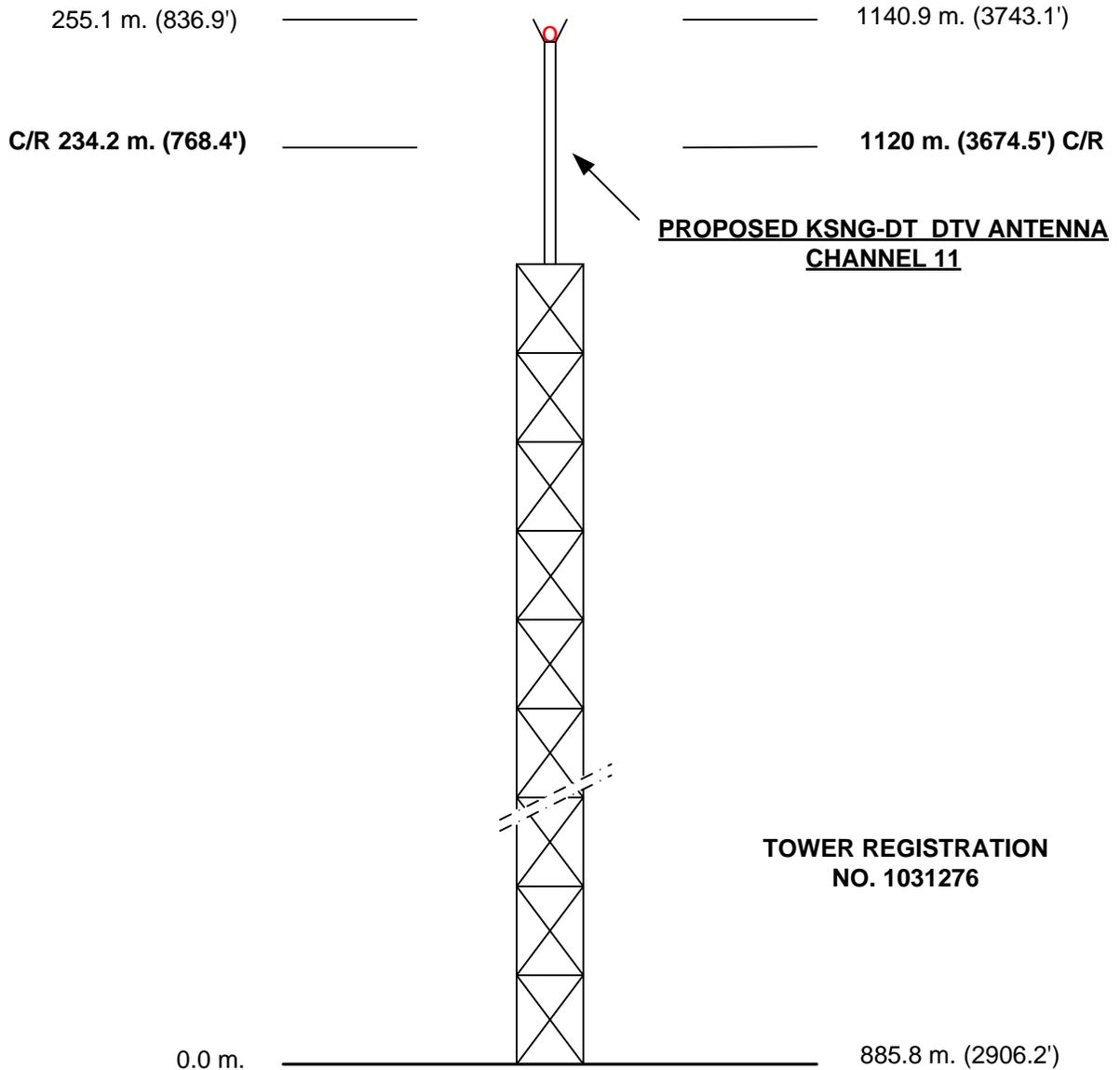
Environmental Assessment

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 are located on a tower which was built prior to the adoption of WT Docket No. 03-128 and therefore grandfathered, and have 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 GROUND

ABOVE MEAN SEA LEVEL



(NOT TO SCALE)

**TOWER REGISTRATION
NO. 1031276**

EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED DTV OPERATION OF
KSNG-DT, GARDEN CITY, KANSAS
JUNE 2009

COHEN, DIPPELL AND EVERIST, P.C.

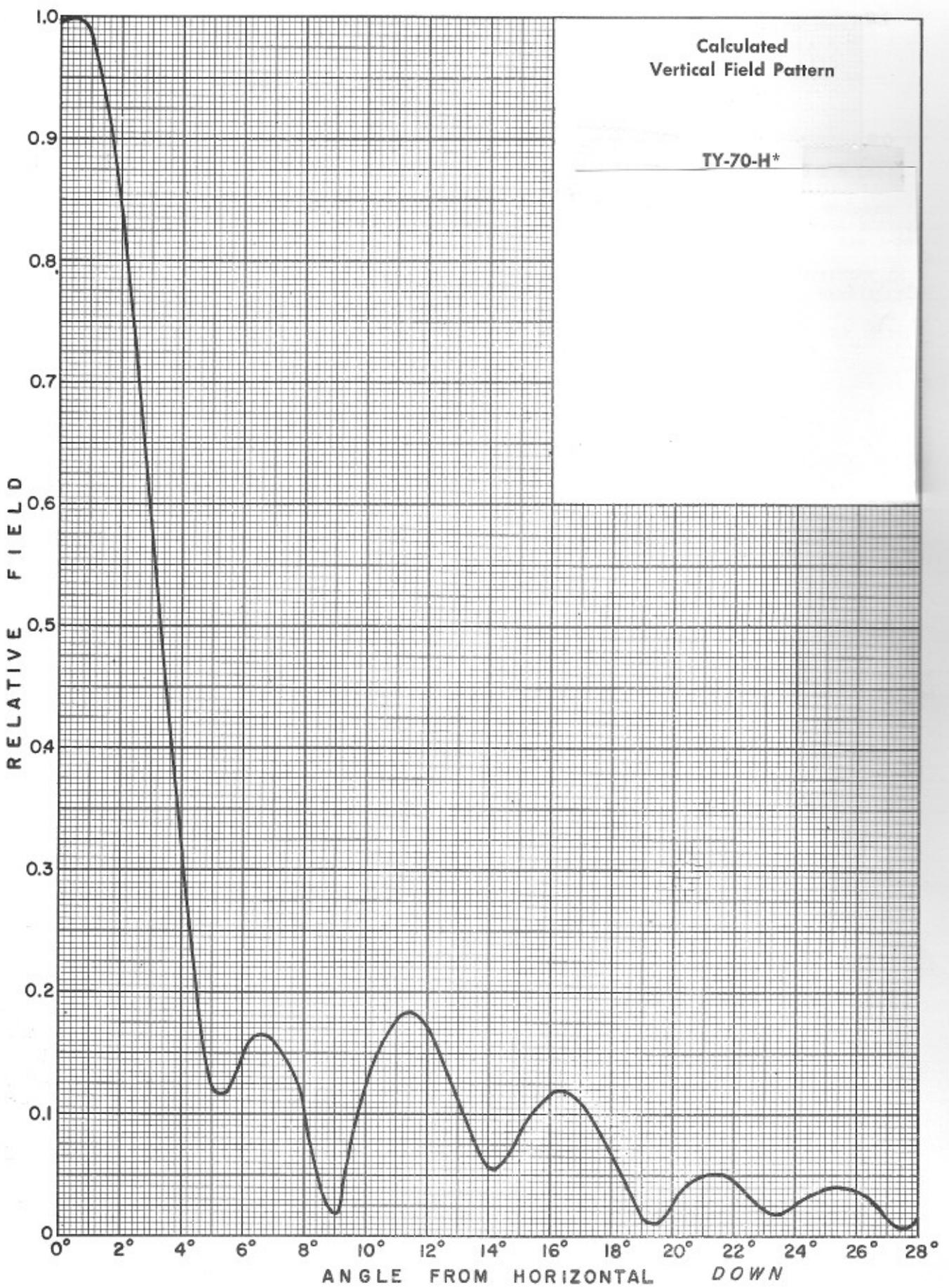
TABLE I
PREDICTED POST-TRANSITION LONGLEY-RICE INTERFERENCE
FOR THE AUTHORIZED POST-TRANSITION OPERATION OF
KSNG-DT, GARDEN CITY, KANSAS
CHANNEL 11 56.8 KW ND ERP 239 METERS HAAT
JUNE 2009

<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>
10	KBSL-DT	GOODLAND KS	197.2	CP MO	BMPCDT-20080313ABS	No interference
10	KBSL-TV	GOODLAND KS	197.2	PLN	DTVPLN-DTVPLN66416	No interference
11	KGIN	GRAND ISLAND NE	359.6	PLN	DTVPLN-DTVPLN7894	0.06%
11	KGIN-DT	GRAND ISLAND NE	359.4	CP MO	BMPCDT-20080611AAP	0.49%
11	K11TW	NORTH PLATTE NE	381.0	LIC	BLTVL-19951018ID	No interference
12	KSNK	MCCOOK NE	228.6	PLN	DTVPLN-DTVPLN72362	No interference
12	KSNK-DT	MCCOOK NE	228.6	LIC	BLCDDT-20031017ABP	No interference

EXHIBIT E-2
ANTENNA DATA

Calculated
Vertical Field Pattern

TY-70-H*



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TABLE II
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
KSNG-DT, GARDEN CITY, KANSAS
CHANNEL 11 56.8 KW ERP 239 METERS HAAT
JUNE 2009

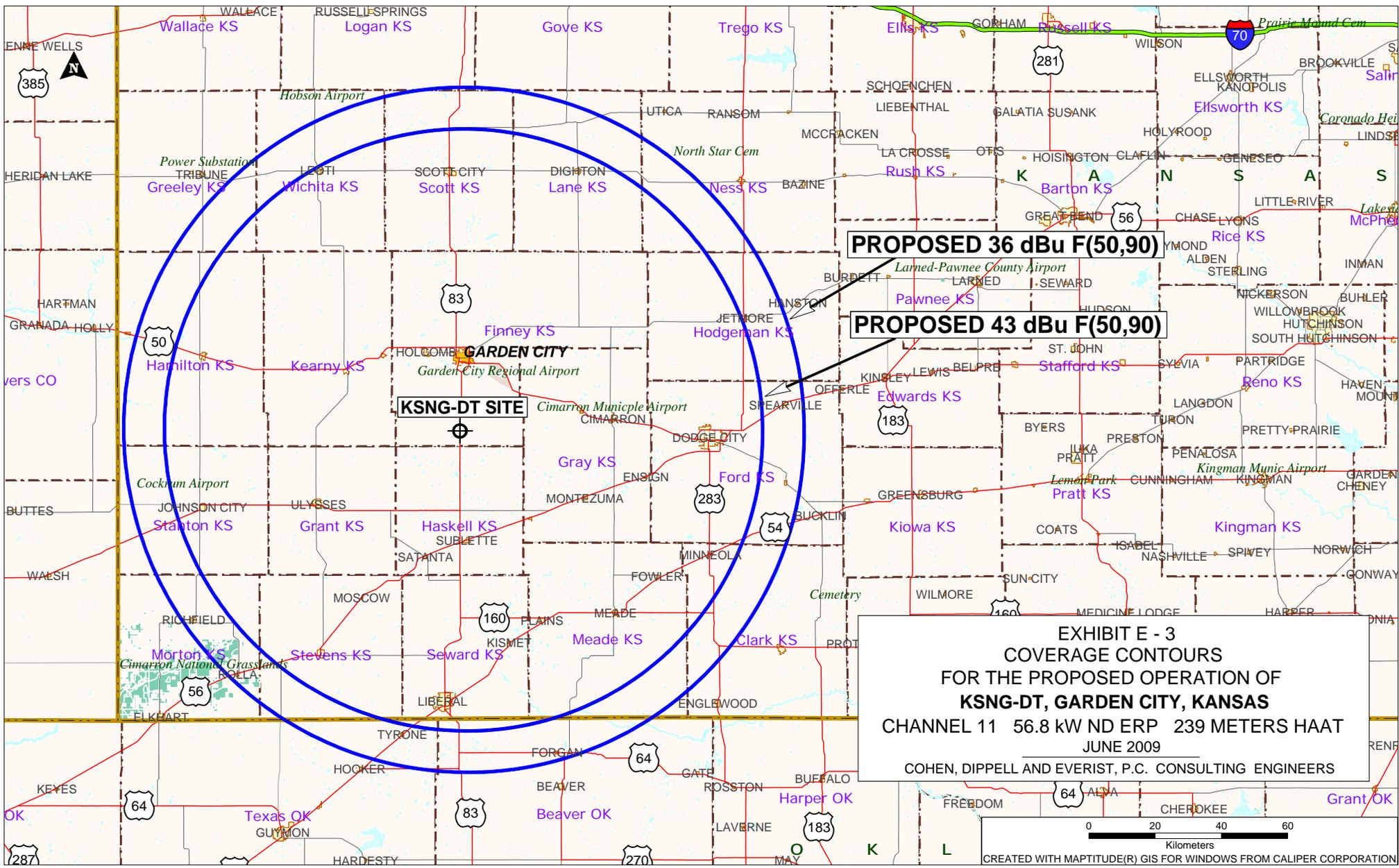
Radial Bearing N ° E, T	Average*	Effective Height meters	Depression Angle	ERP At Radio Horizon kW	Distance to Contour F(50,90)	
	Elevation 3.2 to 16.1 km meters				43 dBu City Grade km	36 dBu Noise-Limited km
0	877.9	242.1	0.431	56.8	90.7	103.2
45	867.6	252.4	0.440	56.8	91.3	103.8
90	868.6	251.4	0.439	56.8	91.2	103.8
135	864.9	255.1	0.442	56.8	91.4	104.0
180	885.9	234.1	0.424	56.8	90.1	102.6
225	897.6	222.4	0.413	56.8	89.2	101.5
270	897.0	223.0	0.414	56.8	89.3	101.6
315	888.7	231.3	0.421	56.8	89.9	102.3
Average	881	239				

*Based on data from FCC 3-second data base

DTV Channel 11 (198-204 MHz)
Average Elevation 3.2 to 16.1 km 881 meters AMSL
Center of Radiation 1120 meters AMSL
Antenna Height Above Average Terrain 239 meters
Effective Radiated Power 56.8 kW (17.54 dBk)

North Latitude: 37° 46' 40"
West Longitude: 100° 52' 08"

(NAD-27)



SECTION III - D - DTV Engineering

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

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to modify pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

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

- 1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:
 - (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. Yes No
 - (b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. Yes No
 - (c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. Yes No
 - (d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"). Yes No
 N/A
 - (e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B. Yes No
 N/A
- 2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RIF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Yes No

Applicant must **submit the Exhibit** called for in Item 13.

- 3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. Yes No
- 4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. Yes No
- 5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. Yes No

SECTION 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:

Manufacturer	Model
--------------	-------

a. Not Applicable

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 pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? Yes No

Exhibit No.

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

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

Exhibit No.

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

Exhibit No.

a. If **Certification Checklist Item 2** is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radio frequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

Yes **KSNG-DT**

10. **Auction Authorization.** If the application is being submitted to obtain a construction permit for which the applicant was the winning bidder in an auction, then the applicant certifies, pursuant to 47 C.F.R. Section 73.5005(a), that it has attached an exhibit containing the information required by 47 C.F.R. Sections 1.2107(d), 1.2110(i), 1.2112(a) and 1.2112(b), if applicable.

Exhibit No.

An exhibit is required unless this question is inapplicable.

11. **Anti-Drug Abuse Act Certification.** Applicant certifies that neither applicant nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862.

Yes No

12. **Equal Employment Opportunity (EEO).** If the applicant proposes to employ five or more full-time employees, applicant certifies that it is filing simultaneously with this application a Model EEO Program Report on FCC Form 396-A.

Yes No N/A

13. **Petition for Rulemaking/Counterproposal to Add New FM Channel to FM Table of Allotments.** If the application is being submitted concurrently with a Petition for Rulemaking or Counterproposal to Amend the FM Table of Allotments (47 C.F.R. Section 73.202) to add a new FM channel allotment, petitioner/counter-proponent certifies that, if the FM channel allotment requested is allotted, petitioner/counter-proponent will apply to participate in the auction of the channel allotment requested and specified in this application.

Yes No N/A

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 Donald G. Everist	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 	Date June 17, 2009	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, N.W., 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	

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