

## **ENGINEERING EXHIBIT**

### **Application for Digital Low Power Television Flash-Cut Construction Permit**

prepared for

#### **Bluestone License Holdings Inc.**

KTES-LP Abilene, TX

Facility ID 64972

Ch. 40 (digital) 15 kW

*Bluestone License Holdings Inc. (“Bluestone”)* is the licensee of Low Power Television station KTES-LP, analog Channel 40, Abilene, TX, Facility ID 64972 (BLTTL-20000505AAN). *Bluestone* proposes herein to “flash cut” KTES-LP to digital operation on its current Channel 40. The facility is proposed to be relocated to another tower structure, 26.9 km distant from the licensed site.

The proposed facility will operate using a “simple” out of channel emission mask. **Figure 1** depicts the 51 dB $\mu$  coverage contours of the proposed facility, as well as that of the KTES-LP licensed analog Channel 40 facility. The service area overlap shown demonstrates compliance with §73.3572 for a minor change.

The proposed antenna is a Dielectric model TFU-8DSB-A and will employ circular polarization. The proposed antenna system will be side-mounted on the existing antenna support structure at the KTES-LP studio location. No change to the overall structure height is proposed.

The overall structure elevation does not exceed 61 meters above ground and passes the FCC’s TOWAIR program for the location. Although FAA notification and FCC Antenna Structure Registration (“ASR”) is therefore not necessary, the structure was registered in 1998 and is associated with ASR number 1052058. It has been determined that the geographic coordinates of the ASR do not match those corresponding to the actual tower location.<sup>1</sup> The FAA will be notified

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<sup>1</sup>The NAD-83 coordinates listed in ASR #1052058 are 32° 31’ 12” N-Lat, 99° 45’ 13” W-Lon, which require

of the corrected coordinates for the tower structure and upon issuance of a *Determination of No Hazard* the FCC ASR will be updated.

A detailed interference study per OET Bulletin 69<sup>2</sup> shows that the proposal complies with the Commission's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in **Table 1**, show that any new interference does not exceed the Commission's interference limits (0.5 percent to full power and Class A stations and 2.0 percent to secondary stations).

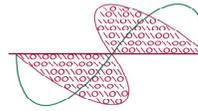
The nearest FCC monitoring station is 590 km distant at Kingsville, TX. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). The site location is beyond the border areas requiring international coordination.

There are no authorized non-directional AM stations within 0.8 kilometers of the site, based on information contained within the Commission's database. Directional AM station KYYW (1470 kHz Abilene, TX) is located 1.5 km from the site. The proposal would add an antenna and transmission line to an existing tower structure which is not base insulated or detuned at an AM frequency, and would not change the overall tower height. In accordance with recent FCC Staff policy (*e.g.*, see BPH-20061220ABW), coordination with the nearby AM station is therefore not expected to be necessary, and it is requested a condition requiring AM station pattern measurements not be placed on the KTES-LP Construction Permit.

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correction to 32° 30' 20" N-Lat, 99° 45' 19" W-Lon. The NAD-27 corrected coordinates are 32° 30' 20" N-Lat, 99° 45' 18" W-Lon, which are specified herein as the proposed site for KTES-LP.

<sup>2</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

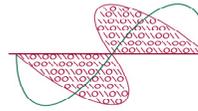


### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposed transmitting antenna will be side-mounted on an existing structure. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 20 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $12.2 \mu\text{W}/\text{cm}^2$ , which is 2.9 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.



### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.  
January 26, 2010

**Chesapeake RF Consultants, LLC**  
11993 Kahns Road  
Manassas, VA 20112  
703-650-9600

### List of Attachments

Figure 1	Coverage Contour Comparison
Table 1	Interference Analysis Results Summary
Form 346	Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered January 26, 2010 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

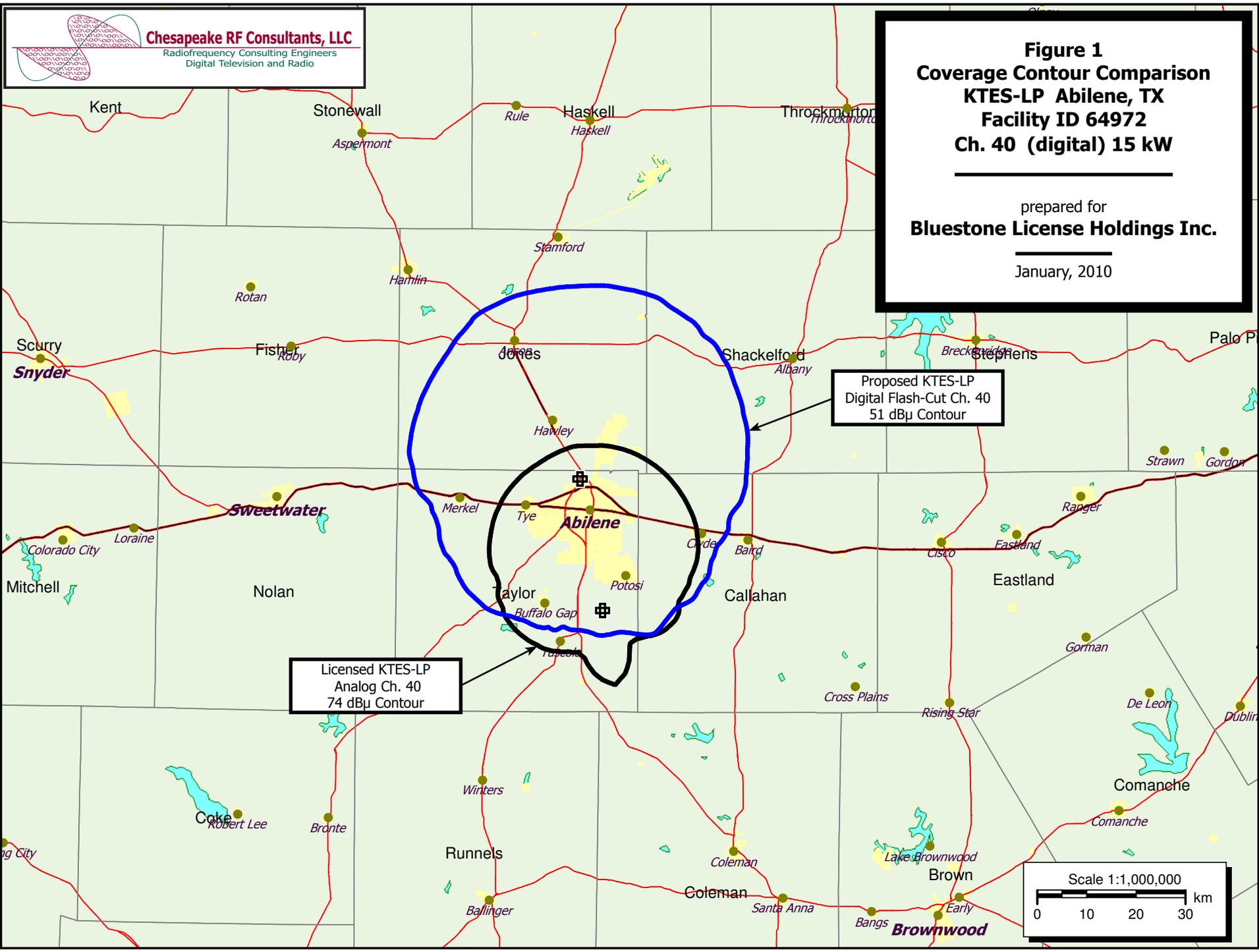
**Figure 1**  
**Coverage Contour Comparison**  
**KTES-LP Abilene, TX**  
**Facility ID 64972**  
**Ch. 40 (digital) 15 kW**

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prepared for  
**Bluestone License Holdings Inc.**

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January, 2010



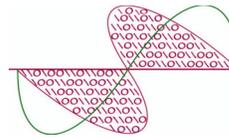
**Table 1**

**Interference Analysis Results Summary**

prepared for

**Bluestone License Holdings Inc.**

**KTES-LP Abilene, TX**



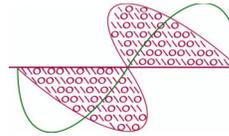
**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
Digital Television and Radio

KTES-LD	USERRECORD-01	ABILENE	TX US
Channel 40	ERP 15. kW	HAAT 50. m	RCAMSL 00572 m
Latitude 032-30-20		Longitude 0099-45-18	
Nondirectional			

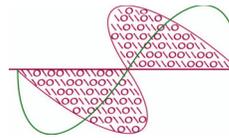
Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
25	NEW	SAN ANGELO TX	132.5	APP	BNPTTL-20000830BGP	---	none
25	NEW	SAN ANGELO TX	128.2	APP	BNPTTL-20000831CJO	---	none
25	K25KE	SAN ANGELO TX	141.6	CP	BNPTTL-20000829AMM	---	none
25	NEW	SAN ANGELO TX	141.5	APP	BNPTTL-20000830BAY	---	none
25	NEW	SAN ANGELO TX	135.6	APP	BNPTTL-20000829ATY	---	none
25	NEW	SAN ANGELO TX	134.0	APP	BNPTTL-20000830AFC	---	none
26	K26AP	BROWNWOOD TX	112.3	LIC	BLTTL-19870826II	---	none
26	NEW	SAN ANGELO TX	141.5	APP	BNPTTL-20000818ACK	---	none
26	K49GT	SNYDER TX	112.0	STA	BSTA-20030812AEB	---	none
26	K49GT	SNYDER TX	112.0	STA	BSTA-20040805AEE	---	none
33	NEW	SAN ANGELO TX	124.6	APP	BNPTTL-20000831AYA	---	none
36	K36JM	ABILENE TX	22.5	CP	BNPTTL-20000818ABM	---	none
36	K36HF	TUSCOLA TX	15.3	LIC	BLTTL-20070613ADK	---	none
38	K38JE	ABILENE TX	22.5	LIC	BLTTL-20090409ATE	---	none
38	K38IO	DE LEON TX	120.7	LIC	BLTTL-20070507AEU	---	none
38	KTXE-LP	SAN ANGELO TX	131.3	LIC	BLTTL-20030328ARD	---	none
39	NEW	LINGLEVILLE TX	137.8	APP	BNPDTL-20090908ABA	---	none
39	K39GH	QUANAH TX	189.6	LIC	BLTT-20050525ADT	---	none
39	NEW	SAN ANGELO TX	131.3	APP	BDCCDTL-20061030AHX	---	none
39	KSWR-LP	SWEETWATER TX	57.5	LIC	BLTTL-20050831AAC	---	none
40	K40GC	DORA NM	382.3	CP	BDFCDTT-20060327AGD	---	none
40	K40GC	DORA NM	382.3	LIC	BLTT-20031107AET	---	none
40	K40FL	ALTUS OK	240.0	LIC	BLTT-20020220AAH	---	none
40	KAUT-TV	OKLAHOMA CITY OK	402.0	LIC	BLCDT-20060504ACH	---	none
40	KAUT-TV	OKLAHOMA CITY OK	401.5	CP	BPCDT-20080620AFC	---	none
40	K40JP-D	SAYRE OK	294.1	CP	BDCCDTT-20061030AAT	---	none
40	K40JP-D	SAYRE OK	294.1	APP	BMPDTT-20091221ACW	---	none
40	K40AG	STRONG CITY OK	364.6	LIC	BLTT-19950127JB	---	none
40	KDAX-LP	AMARILLO TX	363.7	CP	BDISTTL-20070712AAN	---	none
40	KXLK-CA	AUSTIN TX	305.3	LIC	BLTTA-20030424ABA	---	none

**Table 1**  
**Interference Analysis Results Summary**  
 (page 2 of 3)



Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
40	KRHD-LP	BRYAN TX	366.8	CP	BDFCDTA-20090916AAV	---	none
40	KRHD-LP	BRYAN TX	366.7	APP	BSTA-20070608AAW	---	none
40	KRHD-LP	BRYAN TX	366.7	LIC	BLTTA-20071220AAZ	---	none
40	KXTX-TV	DALLAS TX	261.2	LIC	BLCDT-20021106ABR	5,462,653	260 (0.005%)
40	KHPL-CA	LA GRANGE TX	397.1	LIC	BLTTA-20020405ABH	---	none
40	KHPL-CA	LA GRANGE TX	397.1	CP	BDFCDTA-20060329AIQ	---	none
40	KLBK-TV	LUBBOCK TX	227.3	CP MOD	BMPCDT-20070125ABT	354,135	2 (0.001%)
40	K40AL	MEMPHIS TX	267.4	CP	BDFCDTT-20090720ABY	---	none
40	K40AL	MEMPHIS, ETC. TX	268.1	LIC	BLTT-19830726IE	---	none
40	K40FJ	MIDLAND TX	214.7	LIC	BLTTA-20011121ABB	---	none
40	KAEM-LP	SAN ANGELO TX	141.5	CP	BNPTTL-20000830BBJ	---	none
40	KISA-LP	SAN ANTONIO TX	360.8	LIC	BLTTL-20050323AGF	---	none
40	KISA-LP	SAN ANTONIO TX	360.8	APP	BDFCDTL-20081203AEE	---	none
40	KHPM-CA	SAN MARCOS TX	337.6	LIC	BLTTA-20060515ADT	---	none
40	K40HZ	WICHITA FALLS TX	191.5	LIC	BLTTL-20070208ABL	---	none
40	K40HZ	WICHITA FALLS TX	191.5	CP	BPTTL-20070328AGP	---	none
41	K41HQ	QUANAH TX	189.6	LIC	BLTT-20050525AKB	---	none
41	KANG-CA	SAN ANGELO TX	131.2	LIC	BLTTL-19990727JF	---	none
41	K41HX	SAN SABA TX	176.1	LIC	BLTTL-20060103ABX	---	none
41	KSWR-LP	SWEETWATER TX	57.5	CP	BDCCDTL-20061027ABE	---	none
42	KIDZ-LP	ABILENE TX	7.1	LIC	BLTTA-20041025ABY	---	none
42	NEW	SAN ANGELO TX	131.2	APP	BNPTTL-20000830BAK	---	none
42	K42ET	SNYDER TX	112.0	STA	BSTA-20021021ACX	---	none
42	K42ET	SNYDER TX	112.0	LIC	BLTT-20050512ACL	---	none
43	KZSA-LP	SAN ANGELO TX	132.6	LIC	BLTTL-20070314ABE	---	none
44	NEW	ABILENE TX	24.3	APP	BNPTTL-20000830BHN	---	none
44	NEW	ABILENE TX	30.3	APP	BNPTTL-20000831AEM	---	none
44	NEW	ABILENE TX	12.2	APP	BNPTTL-20000810AAK	---	none
44	NEW	ABILENE TX	24.7	APP	BNPTTL-20000807ADY	---	none
44	NEW	ABILENE TX	24.6	APP	BNPTTL-20000831BLW	---	none
44	NEW	ABILENE TX	1.4	APP	BNPTTL-20000831CJU	---	none
44	K44FJ	SAN ANGELO TX	124.6	LIC	BLTT-20000428ABM	---	none
44	K44FG	SNYDER TX	111.3	LIC	BLTT-20010921AAD	---	none
44	KIDT-LP	STAMFORD TX	51.6	LIC	BLTTA-20050415AAS	---	none
44	NEW	SWEETWATER TX	59.0	APP	BNPTTL-20000828AHH	---	none
44	NEW	SWEETWATER TX	63.7	APP	BNPTTL-20000831AHU	---	none
44	NEW	SWEETWATER TX	59.0	APP	BNPTTL-20000828AZP	---	none
47	NEW	SAN ANGELO TX	131.4	APP	BNPTTL-20000830AKK	---	none
47	NEW	SAN ANGELO TX	124.6	0	BNPTTL-20000831AYD	---	none

Table 1  
**Interference Analysis Results Summary**  
 (page 3 of 3)



**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
 Digital Television and Radio

<u>Ch.</u>	<u>Call</u>	<u>City/State</u>	<u>Dist</u> <u>(km)</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>---Population (2000 Census)---</u>	
						<u>Baseline</u>	<u>New Interference</u>
47	NEW	SAN ANGELO TX	141.5	APP	BNPTTL-20000830BAM	---	none
47	NEW	SAN ANGELO TX	135.6	APP	BNPTTL-20000829ATZ	---	none
47	NEW	SAN ANGELO TX	135.6	APP	BNPTTL-20000829AXL	---	none
47	K47IP	SNYDER TX	112.0	LIC	BLTT-20060222AAF	---	none
48	KAFW-LP	ABILENE TX	22.5	LIC	BLTTL-20060109ABM	---	none

**SECTION III - ENGINEERING DATA (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 Number:  
40

2. Translator Input Channel No. :

3. Primary station proposed to be rebroadcast:

Facility Identifier	Call Sign	City	State	Channel
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4. Antenna Location Coordinates: (NAD 27)  
Latitude:  
Degrees 32 Minutes 30 Seconds 20  North  South  
Longitude:  
Degrees 99 Minutes 45 Seconds 18  West  East

5. Antenna Structure Registration Number: 1052058  
 Not Applicable [Exhibit 10]  Notification filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 513.6 meters

7. Overall Tower Height Above Ground Level: 61.0 meters

8. Height of Radiation Center Above Ground Level: 57.9 meters

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

10. Transmitter Output Power: 5 kW

11. a. Transmitting Antenna:  
Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under [CDBS Public Access](http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm) (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs\_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.  
 Nondirectional  Directional "Off-the-shelf"  Directional composite  
Manufacturer DIE Model TFU-8DSB-A CIRCULARLY POLARIZED

b. Electrical Beam Tilt: 1.0 degrees  Not Applicable

c. Directional Antenna Relative Field Values:  N/A (Nondirectional or Directional "Off-the-shelf")  
Rotation (Degrees):  No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0		10		20		30		40		50	
60		70		80		90		100		110	
120		130		140		150		160		170	
180		190		200		210		220		230	
240		250		260		270		280		290	
300		310		320		330		340		350	
Additional Azimuths											

[Relative Field Polar Plot](#)

**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

**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 11]

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 radiofrequency 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 12]  
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 radiofrequency electromagnetic exposure in excess of FCC guidelines.

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 licenses 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 licenses 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 agreements(s) with 700 MHz public safety regional planning committee(s) and state 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), the 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.

**PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

**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 JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 1/26/2010	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD			
City MANASSAS		State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600		E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	