

## **ENGINEERING EXHIBIT**

### **Application for Construction Permit New Replacement Digital Television Translator**

prepared for

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

KRCR-TV Redding, CA

Replacement Digital Translator

Ch. 34 15 kW

*Bluestone License Holdings Inc.* (“*Bluestone*”) is the licensee of television station KRCR-TV, Facility ID 8291, Redding, CA. KRCR-TV is operating on its post-transition digital Channel 7, its pre-transition analog channel. Pursuant to the procedures adopted in MB Docket 08-253,<sup>1</sup> *Bluestone* herein proposes to construct a new replacement digital television translator station on Channel 34 to aid in serving its principal community of Redding, CA and other nearby communities.

Since ceasing analog operations on the transition date, KRCR-TV has received numerous calls regarding reception problems, particularly for indoor reception at locations within Redding and other areas nearby to the transmitter site. Calls have been received from locations in Redding and the nearby communities of Anderson, Happy Valley, and Shingletown, all of which will be within the proposed translator’s service contour. Problems with digital VHF reception by other stations have been widely publicized since the transition date. The proposed translator, to be sited on the same antenna structure as the KRCR-TV VHF digital Channel 7 facility, would provide some level of digital UHF fill-in service to aid indoor reception. The translator will employ the antenna and associated transmitting system utilized by KRCR-TV’s pre-transition digital Channel 34 (BLCDDT-20060926ACS), with the effective radiated power set at 15 kW.

**Figure 1** depicts the 51 dBμ coverage contour of the proposed translator, along with the KRCR-TV digital Channel 7 noise limited contour (BLCDDT-20090622AEG pending) and the pre-

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<sup>1</sup>Report and Order, *Amendment of Parts 73 and 74 of the Commission’s Rules to Establish Rules for Replacement Digital Low Power Television Translator Stations*, MB Docket 08-253, FCC 09-36, released May 8, 2009.

transition analog Channel 7 Grade B contour (BLCT-1664). The translator's service contour will not extend beyond KRCR-TV's former analog Grade B contour.

The proposed translator will employ the existing Channel 34 directional antenna system which is side-mounted on the KRCR-TV antenna supporting structure. The overall structure elevation is less than 61 meters above ground and passes the FCC's TOWAIR program for the transmitter location, thus FCC antenna structure registration is not necessary. No change to the overall structure height and no tower work are required to carry out this proposal.

Detailed interference studies per OET Bulletin 69<sup>2</sup> show that the proposal complies with the Commission's interference protection requirements toward all post-transition 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).

Accordingly, the instant proposal complies with §§73.6012 – 73.6020 regarding interference protection to digital television, low power television, television translator, Class A television, and land mobile facilities.

The nearest FCC monitoring station is 329 km distant at Livermore, CA. This exceeds 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). There are no AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site location is beyond the border areas requiring international coordination.

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<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 proposal will involve use of an existing transmitting antenna. 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. No tower construction or change in structure height is proposed. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's 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 16 percent relative field at downward elevations, the calculated signal density near the antenna structure at two meters above ground level attributable to the proposed facility is  $19 \mu\text{W}/\text{cm}^2$ , which is 4.8 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b)(3) 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. 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, mast 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.



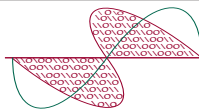
Joseph M. Davis, P.E.  
August 23, 2009

**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 August 23, 2009 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name 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.*



**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 1**  
**Coverage Contour Comparison**  
**KRCR-TV Redding, CA**  
**Replacement Digital Translator**  
**Ch. 34 15 kW**

prepared for  
**Bluestone License Holdings Inc.**

August, 2009

KRCR-TV Digital Ch. 7  
BLCDT-20090622AEG  
Noise Limited Contour (36 dBμ)

KRCR-TV Ch. 7  
Pre-Transition Analog  
BLCT-1664  
Grade B Contour (56 dBμ)

Proposed Translator  
Digital Ch. 34  
Service Contour (51 dBμ)

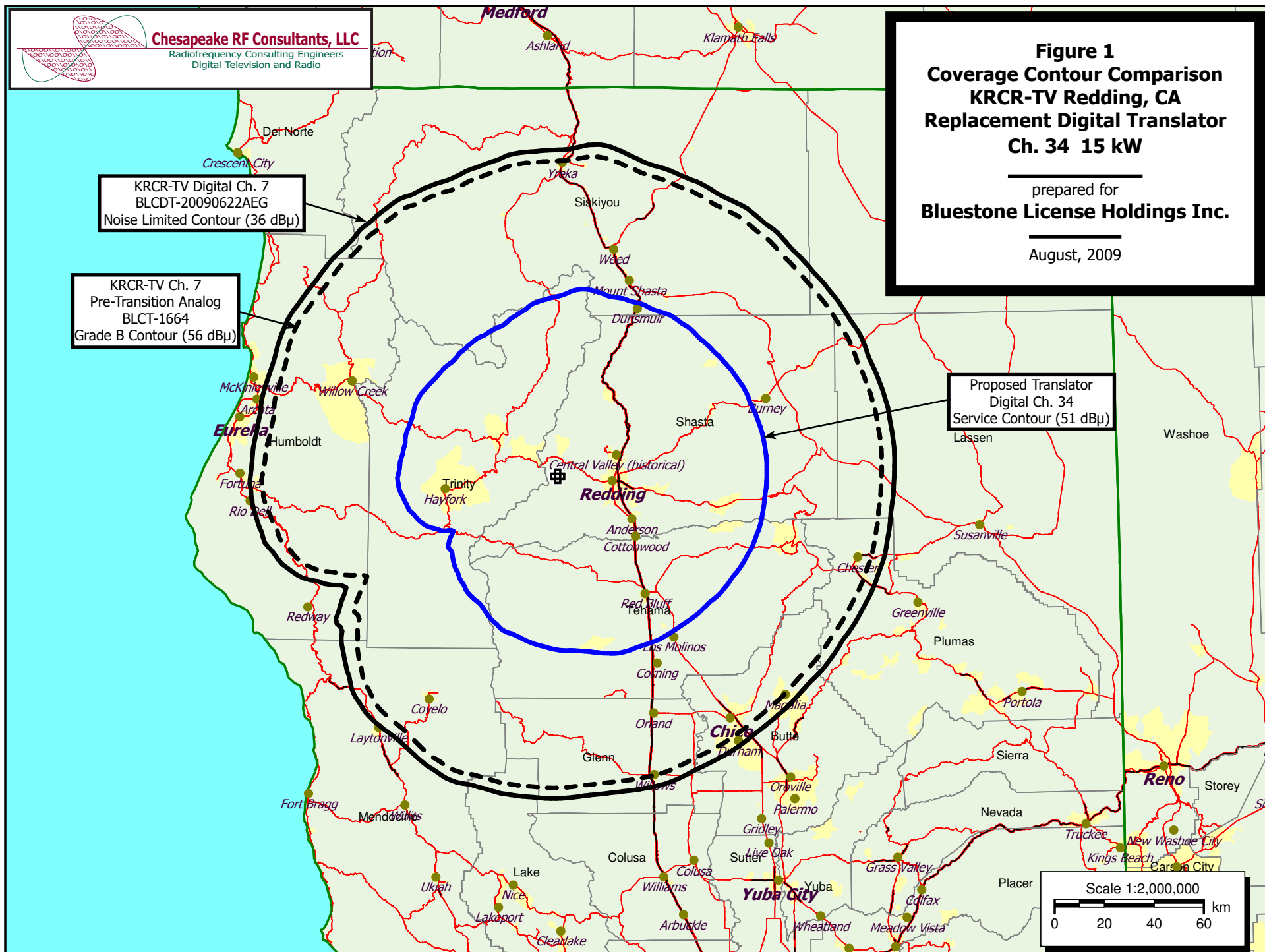
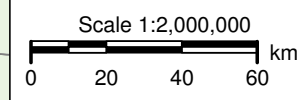
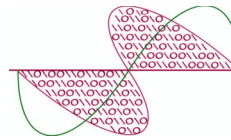


Table 1

**Interference Analysis Results Summary**

prepared for

**Bluestone License Holdings Inc.****KRCR-TV Redding, CA****Chesapeake RF Consultants, LLC**Radiofrequency Consulting Engineers  
Digital Television and Radio

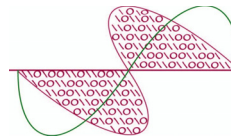
NEW-LD	USERRECORD-01	REDDING	CA US
Channel 34	ERP 15.	kW HAAT 1103. m	RCAMSL 01920 m STRINGENT MASK
Latitude 040-36-10	Longitude 0122-39-00		
Dir Antenna Make CDB	Model 00000000073288	Beam tilt N	Ref Azimuth 0.

Ch.	Call	City/State	Dist	Status	Application Ref. No.	---Population (2000 Census)---	
			(km)			Baseline	New Interference
19	K19FY	CHICO CA	106.8	LIC	BLTT-20060109ABD	---	none
19	NEW	EUREKA CA	131.7	APP	BNPTTL-20000831CEC	---	none
19	NEW	FORTUNA CA	124.6	APP	BNPTTL-20000828BHW	---	none
19	NEW	RIO DELL CA	124.6	APP	BNPTT-20000831BXY	---	none
20	K52FK	EUREKA CA	112.5	CP	BPTTL-20040806AAI	---	none
20	K20CN	FORTUNA, RIO DELL CA	122.8	LIC	BLTTL-19891012JL	---	none
26	NEW	CHICO CA	121.4	APP	BNPTTL-20000830BQI	---	none
26	NEW	EUREKA CA	127.4	APP	BNPTTL-20000830BSH	---	none
26	NEW	EUREKA CA	110.7	APP	BNPTTL-20000824ADV	---	none
26	KGEC-LP	REDDING CA	11.8	LIC	BLTTL-19971023JG	---	none
26	KGEC-LP	REDDING CA	11.8	APP	BMJPTTL-20000831CHI	---	none
27	KUCO-LP	CHICO CA	106.8	LIC	BLTTL-20050405AAP	---	none
27	K27FX	EUREKA CA	139.3	LIC	BLTTL-20001130ABO	---	none
27	K27BH	LAKE SHASTINA CA	103.2	LIC	BLTTL-19890516IK	---	none
27	KUCO-LP	RED BLUFF CA	106.8	STA	BSTA-20030417ACD	---	none
31	KEUV-LP	EUREKA CA	112.5	LIC	BLTTL-20050729AMX	---	none
33	K33JV	CHICO CA	121.4	CP	BNPTTL-20000830BTC	---	none
33	K33DI	EAST WEED CA	93.0	LIC	BLTTL-19910206JJ	---	none
33	KEMY-LP	EUREKA CA	112.5	CP	BDFCDTL-20060403AMZ	---	none
33	KEMY-LP	EUREKA CA	112.5	LIC	BLTTL-20050729AMZ	---	none
33	K33CH	LAKEPORT CA	179.6	LIC	BLTT-19890410IR	---	none
33	K33HH	REDDING CA	12.3	LIC	BLTTL-20030507AAC	151,174	552 (0.37%)
33	K33JP-D	APPLEGATE VALLEY OR	182.6	CP	BDCCDTT-20061030AIR	---	none
33	KFTS	KLAMATH FALLS OR	186.5	LIC	BLEDT-20060202AHF	---	none
34	K34KJ	CRESCENT CITY, ETC. CA	198.9	LIC	BLTTL-20090126ABG	---	none
34	K34KK	LITCHFIELD CA	204.7	LIC	BLTT-20090318ADR	---	none
34	KACA-LP	MODESTO CA	343.1	APP	BSTA-20071018AFT	---	none
34	KACA-LP	MODESTO CA	343.1	LIC	BLTTL-20080813AEP	---	none
34	KRJR-LD	SACRAMENTO CA	245.9	CP	BDCCDTL-20061019AFB	---	none
34	KFSF-DT	VALLEJO CA	317.0	CP	BPCDT-20081031AAE	6,044,783	17 (0.00%)
34	KFSF-DT	VALLEJO CA	317.0	LIC	BLCDDT-20030620ABV	5,840,958	268 (0.00%)

**Table 1**

**Interference Analysis Results Summary**

(page 2 of 2)



**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
Digital Television and Radio

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
34	K34BW	WILLOW CREEK CA	96.3	LIC	BLTTL-19890109IE	---	none
34	K34BL	LOVELOCK NV	336.5	LIC	BLTT-19881117ID	---	none
34	K39FA	SCHURZ NV	369.1	LIC	BLTT-19880301IA	---	none
34	K34IC	GLIDE OR	309.9	APP	BDFCDTL-20090804ABY	---	none
34	K34IC	GLIDE OR	309.9	LIC	BLTTL-20061113AAJ	---	none
34	K34AI	LA PINE OR	375.6	CP	BDFCDTT-20090630AEM	---	none
34	K34BV	MURPHY, ETC. OR	196.4	LIC	BLTT-19880715IE	---	none
34	K34BV	MURPHY, ETC. OR	207.8	APP	BSTA-20060707AFC	---	none
34	K34AI	NORTH LA PINE OR	375.6	LIC	BLTT-19881013IB	---	none
34	K34DJ	PHOENIX, ETC. OR	188.7	LIC	BLTT-19920408IC	---	none
34	K61EH	POWERS OR	283.1	CP	BDISDTT-20090211ADI	---	none
34	K34AI	SUNRIVER OR	375.6	CP	BPTT-20050606AIA	---	none
34	K05MG	SWEET HOME OR	400.3	APP	BDISDTL-20090729AED	---	none
35	KKTF-LP	CHICO CA	106.7	LIC	BLTTL-20070309ABE	169,978	0 (0.00%)
35	KBVQ-LP	EUREKA CA	112.3	LIC	BLTTL-20040930BNB	---	none
35	KBVQ-LP	EUREKA CA	112.3	CP	BDFCDTL-20060330AFR	---	none
35	K35DO	HOPLAND CA	190.4	LIC	BLTT-19940509JJ	---	none
36	K36BT	BLUE LAKE CA	116.6	LIC	BLTTL-19940223IE	---	none
38	K38FQ	ANDERSON-CENTRAL VAL CA	12.4	LIC	BLTTL-20000710AAX	---	none
38	KSGO-LP	CHICO CA	127.7	APP	BDISTTL-20060331ATE	---	none
41	K41FD	EUREKA CA	139.3	LIC	BLTTL-20001213ACR	---	none
41	KRHT-LP	REDDING CA	12.2	LIC	BLTTL-20090312ACS	---	none
41	K41JB	YREKA CA	111.8	LIC	BLTT-20050803AAV	---	none
42	KQSX-LP	CAL - OREGON CA	82.0	CP	BPTTL-20090123ACS	---	none
42	KQSX-LP	CAL - OREGON CA	91.9	LIC	BLTTL-20070730ABL	---	none
42	K42HJ	CHICO CA	121.3	CP	BNPTTL-20000828BHP	---	none

SECTION III - ENGINEERING DATA (Digital)												
<b>TECHNICAL SPECIFICATIONS</b> 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.												
<b>TECH BOX</b>												
1.	Channel Number: 34											
2.	Translator Input Channel No. : 7											
3.	Primary station proposed to be rebroadcast:											
	Facility Identifier	Call Sign	City	State	Channel							
	8291	KRCR-TV	REDDING	CA	7							
4.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 40 Minutes 36 Seconds 10 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 122 Minutes 39 Seconds 0 <input checked="" type="radio"/> West <input type="radio"/> East											
5.	Antenna Structure Registration Number: <input checked="" type="checkbox"/> Not Applicable [Exhibit 10] <input type="checkbox"/> Notification filed with FAA											
6.	Antenna Location Site Elevation Above Mean Sea Level: 1892 meters											
7.	Overall Tower Height Above Ground Level: 38 meters											
8.	Height of Radiation Center Above Ground Level: 28 meters											
9.	Maximum Effective Radiated Power (ERP): 15 kW											
10.	Transmitter Output Power: 1.03 kW											
11.	a. Transmitting Antenna: Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under <a href="http://fjallfoss.fcc.gov/prod/cdb/pubacc/prod/cdb_pa.htm">CDBS Public Access</a> (http://fjallfoss.fcc.gov/prod/cdb/pubacc/prod/cdb_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. <input type="radio"/> Nondirectional <input type="radio"/> Directional "Off-the-shelf" <input checked="" type="radio"/> Directional composite  Manufacturer DIE Model TFU-8DSB-C  b. Electrical Beam Tilt: 1 degrees <input type="checkbox"/> Not Applicable											
	c. Directional Antenna Relative Field Values: <input type="checkbox"/> N/A (Nondirectional or Directional "Off-the-shelf") Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation											
	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
	0	0.59	10	0.671	20	0.748	30	0.818	40	0.877	50	0.924
	60	0.958	70	0.98	80	0.994	90	1	100	0.99	110	0.973
	120	0.946	130	0.907	140	0.857	150	0.792	160	0.713	170	0.628
	180	0.547	190	0.474	200	0.414	210	0.378	220	0.378	230	0.408
	240	0.449	250	0.487	260	0.515	270	0.527	280	0.522	290	0.5
	300	0.467	310	0.43	320	0.4	330	0.398	340	0.44	350	0.51
	Additional Azimuths											
<a href="#">Relative Field Polar Plot</a>												
<b>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.</b>												
12.	Out-of-channel Emission Mask: <input type="radio"/> Simple <input checked="" type="radio"/> Stringent											
<b>CERTIFICATION</b>												
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. <span style="float: right;"><input checked="" type="radio"/> Yes <input type="radio"/> No</span> <span style="float: right;">See Explanation in [Exhibit 11]</span>											
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 <b>Exhibit is required</b> . <span style="float: right;"><input checked="" type="radio"/> Yes <input type="radio"/> No</span> <span style="float: right;">See Explanation in [Exhibit 12]</span>  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:											



<input type="checkbox"/>	The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.
<input type="checkbox"/>	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.	<b>Channels 60-69.</b> If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:  <input type="checkbox"/> 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.  <input type="checkbox"/> 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.  <input type="checkbox"/> 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.
<b>PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.</b>	

### 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 8/23/2009	
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	

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).

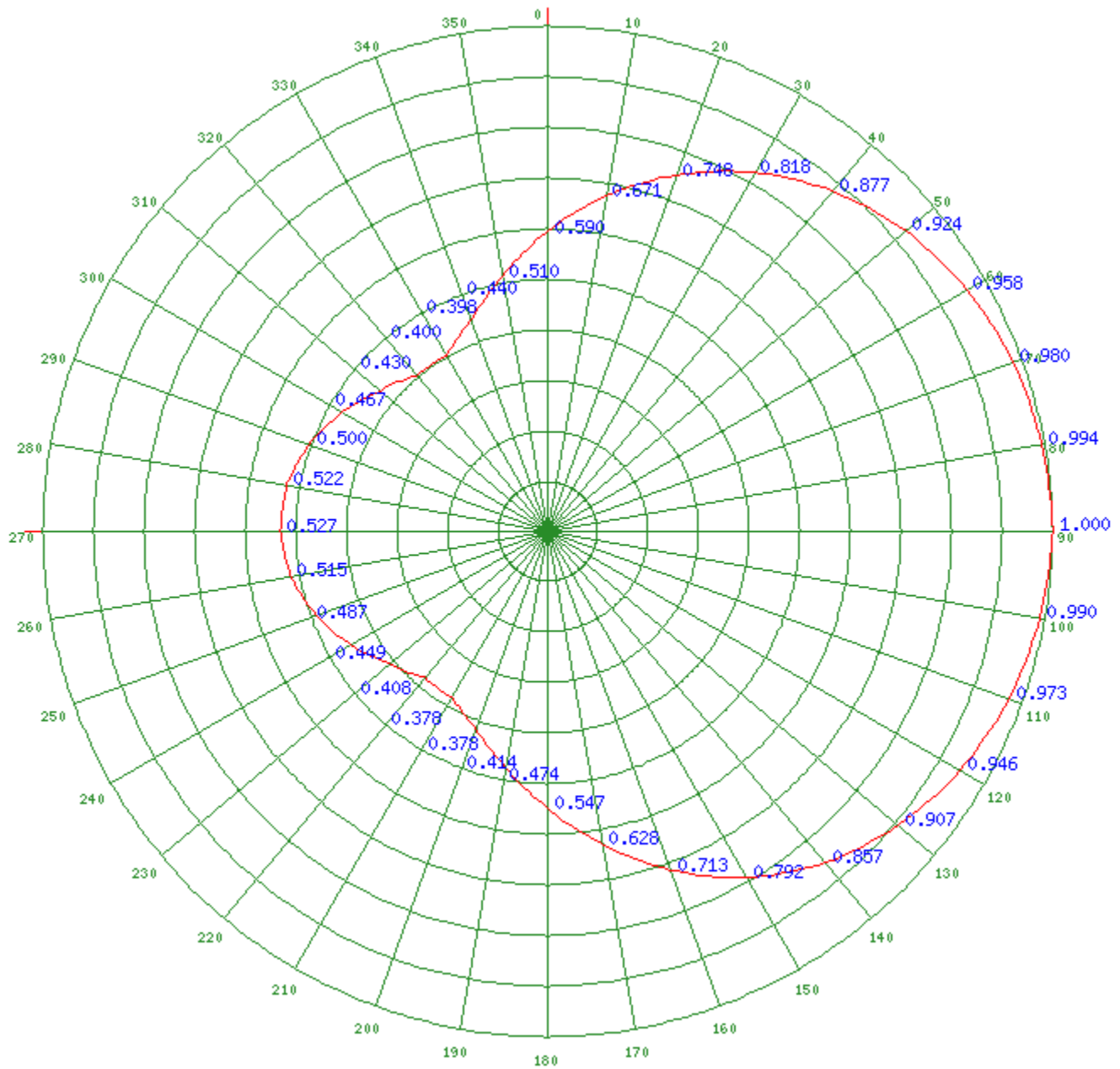
### Exhibits

#### Exhibit 10

**Description:** SEE ENGINEERING EXHIBIT FOR ASR DISCUSSION

Any specified rotation has already been applied to the plotted pattern.  
Field strength values shown on a rotated pattern may differ from the listed values  
because intermediate azimuths are interpolated between entered azimuths.

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