

## **ENGINEERING EXHIBIT**

### **Application for Flashcut Construction Permit Digital Low Power Television Station**

prepared for

**California Broadcasting, Inc.**  
K38FQ Redding, CA  
Facility ID 58611  
Ch. 38 (digital) 15 kW

*California Broadcasting, Inc. ("CBI")* is the licensee of Low Power Television station K38FQ, Facility ID 58611, Anderson / Central Valley, CA. K38FQ is licensed to operate as analog on Channel 38 (BLTTL-20000710AAX). *CBI* proposes herein to flashcut K38FQ to digital operation utilizing the presently licensed antenna system. Additionally, this application specifies an administrative change to specify Redding, CA as the community to be served.

As proposed herein, the K38FQ will operate on Channel 38 at 15 kW effective radiated power ("ERP") utilizing the licensed antenna system and a "stringent" out of channel emission mask. No other changes are proposed.

K38FQ employs a side-mounted antenna system on a tower structure which is not registered with the FCC, as it is less than 61 meters overall height above ground and there are no landing areas within 8 km according to the FCC's "TOWAIR" slope test program. No change to the structure's overall height is proposed.

Figure 1 depicts the 51 dB $\mu$  coverage contour of the proposed facility with the 74 dB $\mu$  contour of the licensed analog facility. The use of the same site and the service area overlap shown demonstrates compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69<sup>1</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) to any facility and therefore the proposal complies with §74.793.

The nearest FCC monitoring station is 332 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 authorized AM stations within 3.2 kilometers of the site. The site is not within a border area requiring international coordination.

### **Human Exposure to Radiofrequency Electromagnetic Field**

The facility will utilize an existing transmitting antenna. The transmitting location is at the antenna farm on South Fork Mountain overlooking Redding and the area to be served. This portion of South Fork Mountain is a developed communications site area containing numerous other transmitting facilities. According to the applicant, access to the South Fork Mountain communications facilities is restricted and the site is considered to be a "controlled" area. Access to the site is restricted with warning signs near the site and at the locked gate over 1 mile distant along the access road. Further, the site is remote and steep terrain serves to discourage and restrict casual access. These restrictions serve to restrict access to authorized persons that are aware of the potential for exposure. Therefore, the occupational/controlled MPE limit is applicable to the South Fork Mountain antenna site area.

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<sup>1</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.

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 15 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  $59.2 \mu\text{W}/\text{cm}^2$  which is 2.9 percent of the occupational/controlled 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. Further, the proposed digital operation at 15 kW ERP will result in a reduction in RF levels from the licensed 150 kW analog operation.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. 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.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposal involves use of an existing side-mounted transmitting antenna. No antenna or tower work is required to carry out this proposal.

### **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.  
May 2, 2013

**Chesapeake RF Consultants, LLC**  
207 Old Dominion Road  
Yorktown, VA 23692  
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 May 2, 2013 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.*



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

**Figure 1**  
**Coverage Contour Comparison**  
**K38FQ Redding, CA**  
**Facility ID 58611**  
**Ch. 38 (digital) 15 kW**

prepared for  
**California Broadcasting, Inc.**

May, 2013

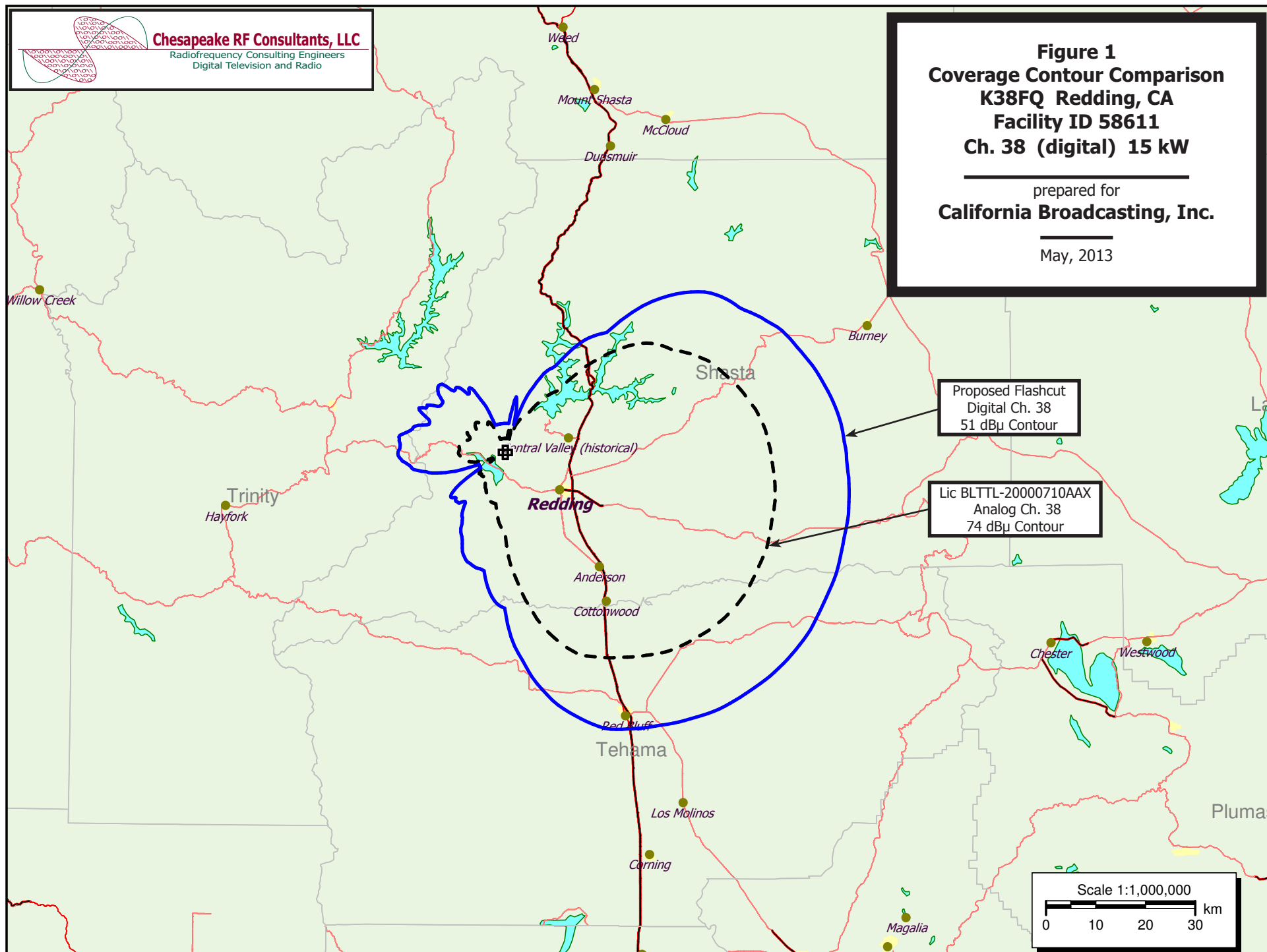


Table 1

**Interference Analysis Results Summary**

prepared for

**California Broadcasting, Inc.****K38FQ Redding, CA**

K38FQ-D USERRECORD-01 REDDING CA US  
 Channel 38 ERP 15. kW HAAT 450. m RCAMSL 00979 m STRINGENT MASK  
 Latitude 040-39-16 Longitude 0122-31-13  
 Dir Antenna Make CDB Model 00000000017676 Beam tilt N Ref Azimuth 110.

		Dist					---Population (2000 Census)---	
<u>Ch.</u>	<u>Call</u>	<u>(km)</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>Baseline</u>	<u>New Interference</u>		
31	KEUV-LP	EUREKA CA	122.8	LIC	BLTTL-20050729AMX	---	none	
34	K34BW	WILLOW CREEK CA	104.2	LIC	BLTTL-19890109IE	---	none	
36	K36BT	BLUE LAKE CA	125.7	LIC	BLTTL-19940223IE	---	none	
38	DKSGO-LP	CHICO CA	124.2	APP	BDISTTL-20060331ATE	73,812	-60,712	*
38	KEET	FORTUNA CA	136.3	CP	BDRTEDT-20090825BMR	---	none	
38	KRON-TV	SAN FRANCISCO CA	322.3	LIC	BLCDDT-20091110AAH	---	none	
38	K38IU-D	SUSANVILLE, ETC CA	184.2	LIC	BLDTL-20101208AAA	---	none	
38	K38LL-D	WEED CA	87.4	CP	BNPDTL-20090825ARK	---	none	
38	NEW	SILVER SPRINGS NV	303.3	APP	BNPDTL-20090825BOI	---	none	
38	K38FW	STATELINE NV	287.8	CP	BDFCDTL-20090824ABU	---	none	
38	K38FW	STATELINE NV	289.8	LIC	BLTTL-20030205AAP	---	none	
38	K38JK-D	EUGENE OR	386.7	LIC	BLDTL-20091217AFG	---	none	
38	K38JK-D	EUGENE OR	386.7	CP MOD	BMPDTL-20100111AEI	---	none	
38	K20DT	GRANTS PASS OR	209.9	CP	BDISDTL-20090630AHV	---	none	
38	K38DT-D	NORTH LA PINE OR	367.5	LIC	BLDTL-20111221ADJ	---	none	
38	K38LB-D	POWERS OR	282.6	LIC	BLDTT-20120503ADR	---	none	
38	K38LQ-D	ROSEBURG OR	291.9	LIC	BLDTT-20120521ADW	---	none	
39	K39EO-D	CRESCENT CITY CA	188.7	LIC	BLDTL-20120612AAV	---	none	
39	DK39DG-D	TRINITY CENTER CA	38.2	LIC	BLDTT-20081007AFB	---	none	
39	K39AG	UKIAH CA	177.7	LIC	BLTT-19830125IN	---	none	
39	K39KM-D	WEED CA	87.4	CP	BNPDTL-20090825ARS	---	none	
39	K39EF	ASHLAND OR	183.4	LIC	BLTTL-20041228ABH	---	none	
39	K39EF	ASHLAND OR	183.7	CP	BDFCDTL-20090102ACJ	---	none	
39	K39DP	KLAMATH FALLS OR	184.0	CP	BDFCDTL-20090102ACG	---	none	
39	K39DP	KLAMATH FALLS OR	184.0	LIC	BLTTL-19960531JA	---	none	
41	KRHT-LP	REDDING CA	0.2	LIC	BLTTL-20090312ACS	---	none	
41	K41JB	YREKA CA	106.4	LIC	BLTT-20050803AAV	---	none	
42	KQSX-LP	CAL - OREGON CA	73.2	LIC	BLTTL-20090819AHE	---	none	
46	K46HI	REDDING CA	0.0	LIC	BLTTL-20040329ABN	---	none	

\* Interference decreases to DKSGO-LP (APP), Facility ID 128022, BDISTTL-20060331ATE

The KSGO-LP license was cancelled on February 19, 2013 as the

facility failed to transmit a broadcast signal for at least 12 consecutive months.

Section III - Engineering (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: 38																																																																																																										
2.	Translator Input Channel No. :																																																																																																										
3.	Primary station proposed to be rebroadcast: <table border="1"><tr><td>Facility Identifier</td><td>Call Sign</td><td>City</td><td>State</td><td>Channel</td></tr></table>											Facility Identifier	Call Sign	City	State	Channel																																																																																											
Facility Identifier	Call Sign	City	State	Channel																																																																																																							
4.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 40 Minutes 39 Seconds 16 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 122 Minutes 31 Seconds 13 <input checked="" type="radio"/> West <input type="radio"/> East																																																																																																										
5.	Antenna Structure Registration Number: <input checked="" type="checkbox"/> Not Applicable [Exhibit 11] <input type="checkbox"/> Notification filed with FAA																																																																																																										
6.	Antenna Location Site Elevation Above Mean Sea Level: 963.2 meters																																																																																																										
7.	Overall Tower Height Above Ground Level: 30.5 meters																																																																																																										
8.	Height of Radiation Center Above Ground Level: 15.8 meters																																																																																																										
9.	Maximum Effective Radiated Power (ERP): 15 kW																																																																																																										
10.	Transmitter Output Power: 0.088 kW																																																																																																										
11.	<b>a. Transmitting Antenna:</b> Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under <a href="http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm">CDBS Public Access</a> ( <a href="http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm">http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm</a> ). 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 checked="" type="radio"/> Directional Off-the Shelf <input type="radio"/> Directional composite  Manufacturer ANT Model ACB32DR  <b>b. Electrical Beam Tilt:</b> 0.5 degrees <input type="checkbox"/> Not Applicable  <b>c. Mechanical Beam Tilt:</b> degrees toward azimuth degrees True <input checked="" type="checkbox"/> Not Applicable  <b>d. Directional Antenna Relative Field Values:</b> <input checked="" type="checkbox"/> N/A (Nondirectional or Off-the-Shelf) Rotation (Degrees): 110 <input type="checkbox"/> No Rotation <table border="1"><thead><tr><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th></tr></thead><tbody><tr><td>0</td><td></td><td>10</td><td></td><td>20</td><td></td><td>30</td><td></td><td>40</td><td></td><td>50</td><td></td></tr><tr><td>60</td><td></td><td>70</td><td></td><td>80</td><td></td><td>90</td><td></td><td>100</td><td></td><td>110</td><td></td></tr><tr><td>120</td><td></td><td>130</td><td></td><td>140</td><td></td><td>150</td><td></td><td>160</td><td></td><td>170</td><td></td></tr><tr><td>180</td><td></td><td>190</td><td></td><td>200</td><td></td><td>210</td><td></td><td>220</td><td></td><td>230</td><td></td></tr><tr><td>240</td><td></td><td>250</td><td></td><td>260</td><td></td><td>270</td><td></td><td>280</td><td></td><td>290</td><td></td></tr><tr><td>300</td><td></td><td>310</td><td></td><td>320</td><td></td><td>330</td><td></td><td>340</td><td></td><td>350</td><td></td></tr><tr><td>Additional Azimuths</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>											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											
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	<b>e. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?</b> <input type="radio"/> Yes <input checked="" type="radio"/> No  [Exhibit 12]  If Yes, attach an Exhibit (see instructions for details).																																																																																																										
<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.	<b>Out-of-channel Emission Mask:</b> <input type="radio"/> Simple <input checked="" type="radio"/> Stringent <input type="radio"/> Full Service																																																																																																										
<b>CERTIFICATION</b>																																																																																																											
13.	<b>Interference :</b> 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. <input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 13]																																																																																																										

14.	<b>Environmental Protection Act.</b> 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>  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.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 14]
15.	<b>Channels 52-59.</b> 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

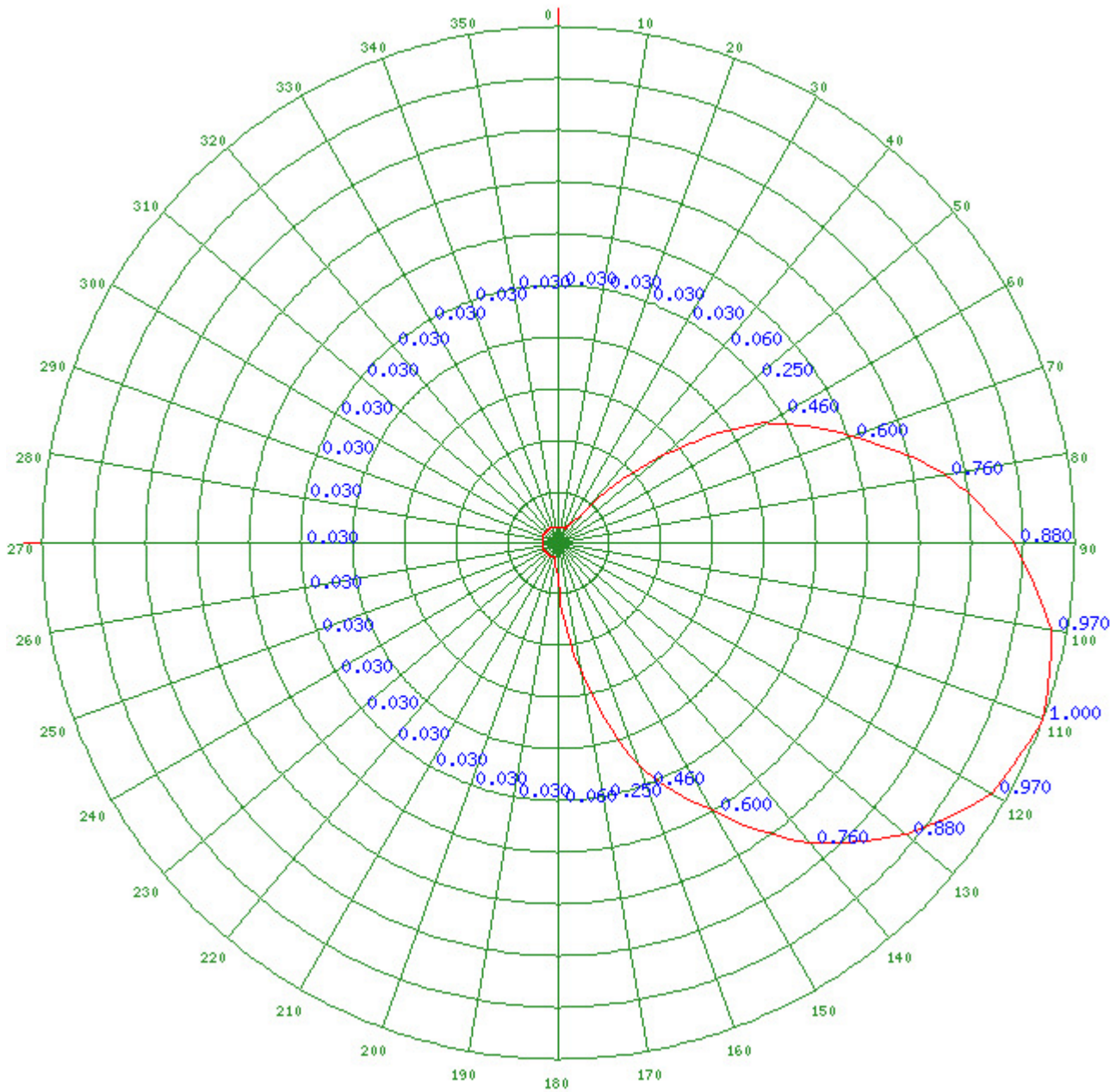
I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 05/02/2013	
Mailing Address CHESAPEAKE RF CONSULTANTS LLC 207 OLD DOMINION ROAD			
City YORKTOWN	State or Country (if foreign address) VA		Zip Code 23692 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM		



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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