

## **ENGINEERING EXHIBIT**

### **Application for Modification of Construction Permit Digital Low Power Television Station**

prepared for

**California Broadcasting, Inc.**  
K35LF-D Eureka, CA  
Facility ID 40271  
Ch. 35 (digital) 15 kW

*California Broadcasting, Inc. ("CBI")* is the licensee of Low Power Television station K52FK, Facility ID 40271, Eureka, CA (BLTTTL-20001213AAB). The K52FK licensed analog operation on Channel 52 is displaced pursuant to §73.3572(a)(4)(ii). Per FCC 11-110<sup>1</sup>, the Channel 52 operation went silent by December 31, 2011. Operation as analog on Channel 35 is authorized by Special Temporary Authorization (BSTA-20121213ADX). A Construction Permit ("CP" BMPDTL-20121129BKQ) authorizes digital operation on Channel 35 and relocation of K52FK to another site. The callsign K35LF-D has been assigned for operation on Channel 35. *CBI* proposes herein to modify the CP to specify a different directional antenna while maintaining the currently authorized site, antenna height, and effective radiated power.

K35LF-D will operate on Channel 35 using a "stringent" out of channel emission mask as currently authorized. Figure 1 depicts the 51 dBμ coverage contour of the proposed facility with that of the current CP and the 74 dBμ contour of the licensed analog facility. The service area overlap shown demonstrates compliance with §73.3572 for a minor change.

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<sup>1</sup>*Amendment of Parts 73 and 74 of the Commission's Rules to Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations, Second Report and Order, MB Docket 03-185, FCC 11-110, released July 15, 2011.*

The proposed facility will employ a new antenna system to be side-mounted on an existing tower structure associated with Antenna Structure Registration (“ASR”) number 1011979. No change to the overall structure height is proposed.

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) to any facility and therefore the proposal complies with §74.793.

The nearest FCC monitoring station is 385 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 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  $11.0 \mu\text{W}/\text{cm}^2$  which is 2.8 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.

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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.

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 continue to 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.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposal involves installation of a side-mounted transmitting antenna on an existing antenna support structure. No change in structure height is proposed.

### **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.



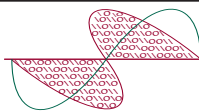
Joseph M. Davis, P.E.  
April 16, 2013

**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 April 16, 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**  
**K35LF-D Eureka, CA**  
**Facility ID 40271**  
**Ch. 35 (digital) 15 kW**

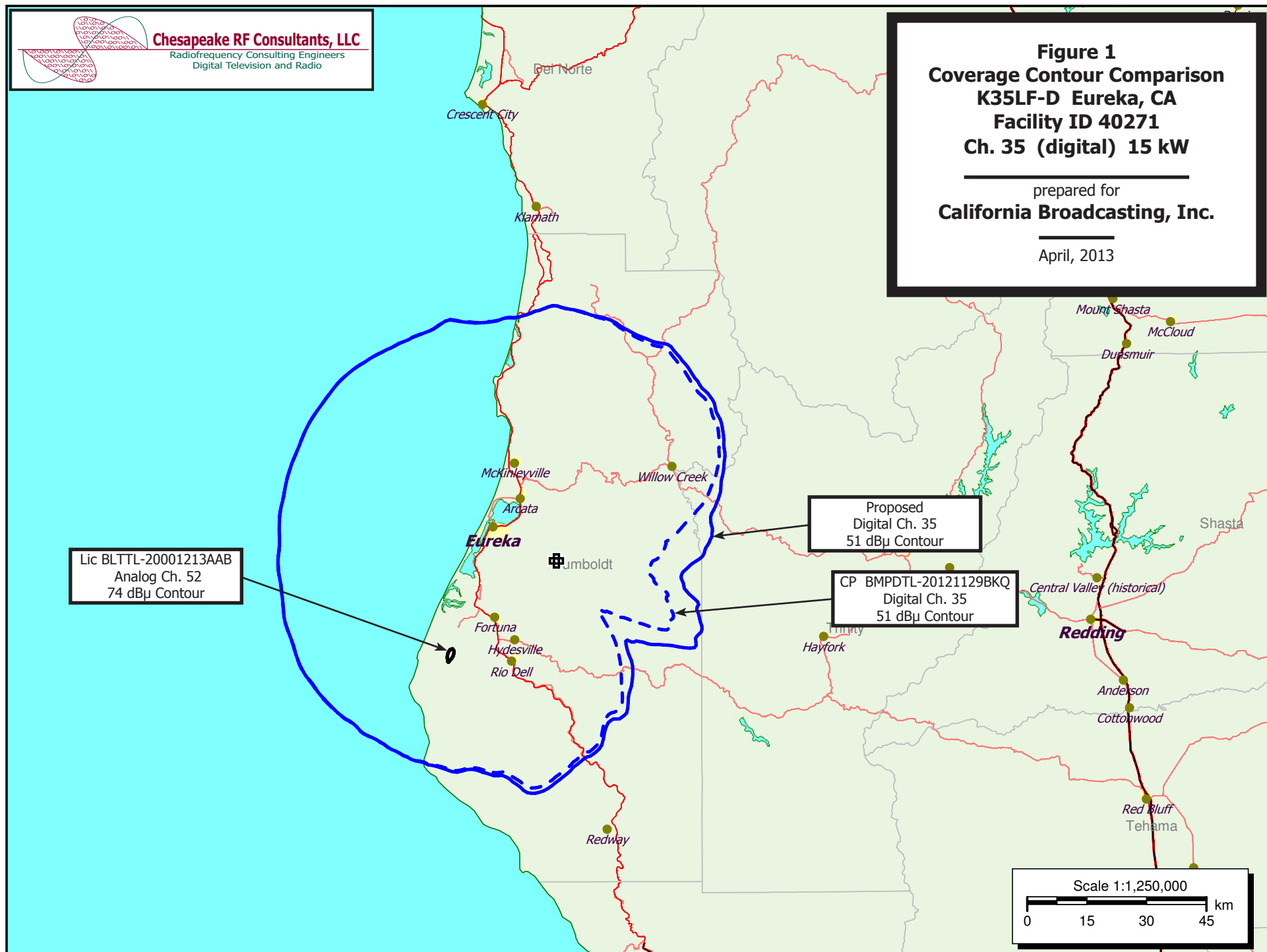
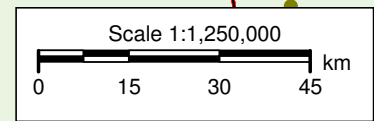
prepared for  
**California Broadcasting, Inc.**

April, 2013

Lic BLTTL-20001213AAB  
Analog Ch. 52  
74 dBμ Contour

Proposed  
Digital Ch. 35  
51 dBμ Contour

CP BMPDTL-20121129BKQ  
Digital Ch. 35  
51 dBμ Contour



**Table 1**

**Interference Analysis Results Summary**

prepared for

**California Broadcasting, Inc.**

**K35LF-D Eureka, CA**



K35LF-D USERRECORD-01 EUREKA CA US  
 Channel 35 ERP 15. kW HAAT 453. m RCAMSL 00838 m STRINGENT MASK  
 Latitude 040-43-36 Longitude 0123-58-27  
 Dir Antenna Make usr Model ALP\_E Beam tilt N Ref Azimuth 290.

Ch.	Call	City/State	Dist	Status	Application Ref. No.	---Population (2000 Census)----	
			(km)			Baseline	New Interference
20	K20CN	FORTUNA, RIO DELL CA	35.3	LIC	BLTTL-19891012JL	---	none
31	KEUV-LP	EUREKA CA	0.0	LIC	BLTTL-20050729AMX	---	none
33	KEMY-LP	EUREKA CA	0.0	LIC	BLTTL-20050729AMZ	---	none
33	K33HH	REDDING CA	122.8	LIC	BLTTL-20030507AAC	---	none
34	K34KJ-D	CRESCENT CITY, ETC. CA	139.3	LIC	BLDTL-20100802AZM	---	none
34	KRCR-TV	REDDING CA	112.5	LIC	BLCDT-20100609ABL	---	none
34	K34BW	WILLOW CREEK CA	36.0	LIC	BLTTL-19890109IE	---	none
34	K34DJ	PHOENIX, ETC. OR	202.3	LIC	BLTT-19920408IC	---	none
35	K35DO	HOPLAND CA	213.0	APP	BSTA-20130308ADP	---	none
35	K35DO	HOPLAND CA	213.0	LIC	BLTT-19940509JJ	---	none
35	K35DO	HOPLAND CA	194.1	CP	BDFCDTT-20090824AJS	98,133	96 (0.10%)
35	K35LB-D	LAKESHORE CA	130.3	LIC	BLDTL-20120319AAY	---	none
35	KCRA-TV	SACRAMENTO CA	346.8	LIC	BMLCDT-20110630AGB	---	none
35	KGO-TV	SAN JOSE CA	401.9	LIC	BLCDT-20111201NYO	---	none
35	K35JQ-D	TRUCKEE CA	365.9	CP	BNPDTL-20090825BQK	---	none
35	K35JX-D	WESTWOOD CA	254.6	LIC	BLDTT-20100722HYE	---	none
35	NEW	CARSON CITY NV	398.3	APP	BNPDTL-20090825ANC	---	none
35	NEW	RENO NV	376.8	APP	BNPDTL-20090825AOX	---	none
35	NEW	SUN VALLEY NV	376.7	APP	BNPDTL-20090825BER	---	none
35	K35HW-D	FLORENCE OR	359.2	LIC	BLDTT-20100114AEE	---	none
35	K35JH-D	LONDON SPRINGS OR	331.5	LIC	BLDTT-20091109AAY	---	none
36	K36BT	BLUE LAKE CA	18.2	LIC	BLTTL-19940223IE	---	none
36	K36HM-D	FORT DICK CA	157.6	LIC	BLDTT-20090810ACY	---	none
36	KHSL-TV	REDDING CA	122.6	LIC	BLCDT-20091221AGI	---	none
36	K36HL	GRANTS PASS OR	196.0	LIC	BLTT-20051110AED	---	none
36	K36KF-D	MEDFORD OR	205.8	CP	BNPDTL-20090825BFO	---	none
38	K38FQ	ANDERSON/CENTRAL VAL CA	122.8	LIC	BLTTL-20000710AAX	---	none

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: 35																																																																																																										
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 43 Seconds 36 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 123 Minutes 58 Seconds 27 <input checked="" type="radio"/> West <input type="radio"/> East																																																																																																										
5.	Antenna Structure Registration Number: 1011979 <input type="checkbox"/> Not Applicable [Exhibit 11] <input type="checkbox"/> Notification filed with FAA																																																																																																										
6.	Antenna Location Site Elevation Above Mean Sea Level: 804 meters																																																																																																										
7.	Overall Tower Height Above Ground Level: 67 meters																																																																																																										
8.	Height of Radiation Center Above Ground Level: 34 meters																																																																																																										
9.	Maximum Effective Radiated Power (ERP): 15 kW																																																																																																										
10.	Transmitter Output Power: 1.16 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/cdbbs/pubacc/prod/cdbbs_pa.htm">CDBS Public Access</a> ( <a href="http://licensing.fcc.gov/prod/cdbbs/pubacc/prod/cdbbs_pa.htm">http://licensing.fcc.gov/prod/cdbbs/pubacc/prod/cdbbs_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 type="radio"/> Directional Off-the Shelf <input checked="" type="radio"/> Directional composite  Manufacturer ERI Model AL8E-35-PL  <b>b. Electrical Beam Tilt:</b> 1.75 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 type="checkbox"/> N/A (Nondirectional or Off-the-Shelf) Rotation (Degrees): 290 <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>1</td><td>10</td><td>0.999</td><td>20</td><td>0.999</td><td>30</td><td>0.999</td><td>40</td><td>0.996</td><td>50</td><td>0.979</td></tr><tr><td>60</td><td>0.944</td><td>70</td><td>0.89</td><td>80</td><td>0.826</td><td>90</td><td>0.758</td><td>100</td><td>0.687</td><td>110</td><td>0.597</td></tr><tr><td>120</td><td>0.476</td><td>130</td><td>0.340</td><td>140</td><td>0.229</td><td>150</td><td>0.188</td><td>160</td><td>0.222</td><td>170</td><td>0.287</td></tr><tr><td>180</td><td>0.322</td><td>190</td><td>0.287</td><td>200</td><td>0.222</td><td>210</td><td>0.188</td><td>220</td><td>0.229</td><td>230</td><td>0.340</td></tr><tr><td>240</td><td>0.476</td><td>250</td><td>0.597</td><td>260</td><td>0.687</td><td>270</td><td>0.758</td><td>280</td><td>0.826</td><td>290</td><td>0.89</td></tr><tr><td>300</td><td>0.944</td><td>310</td><td>0.979</td><td>320</td><td>0.996</td><td>330</td><td>0.999</td><td>340</td><td>0.999</td><td>350</td><td>0.999</td></tr><tr><td colspan="2">Additional Azimuths</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	1	10	0.999	20	0.999	30	0.999	40	0.996	50	0.979	60	0.944	70	0.89	80	0.826	90	0.758	100	0.687	110	0.597	120	0.476	130	0.340	140	0.229	150	0.188	160	0.222	170	0.287	180	0.322	190	0.287	200	0.222	210	0.188	220	0.229	230	0.340	240	0.476	250	0.597	260	0.687	270	0.758	280	0.826	290	0.89	300	0.944	310	0.979	320	0.996	330	0.999	340	0.999	350	0.999	Additional Azimuths											
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e. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?  [Exhibit 12]  If Yes, attach an Exhibit (see instructions for details).											<input type="radio"/> Yes <input checked="" type="radio"/> No																																																																																																
<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.  See Explanation in [Exhibit 13]											<input checked="" type="radio"/> Yes <input type="radio"/> No																																																																																															

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

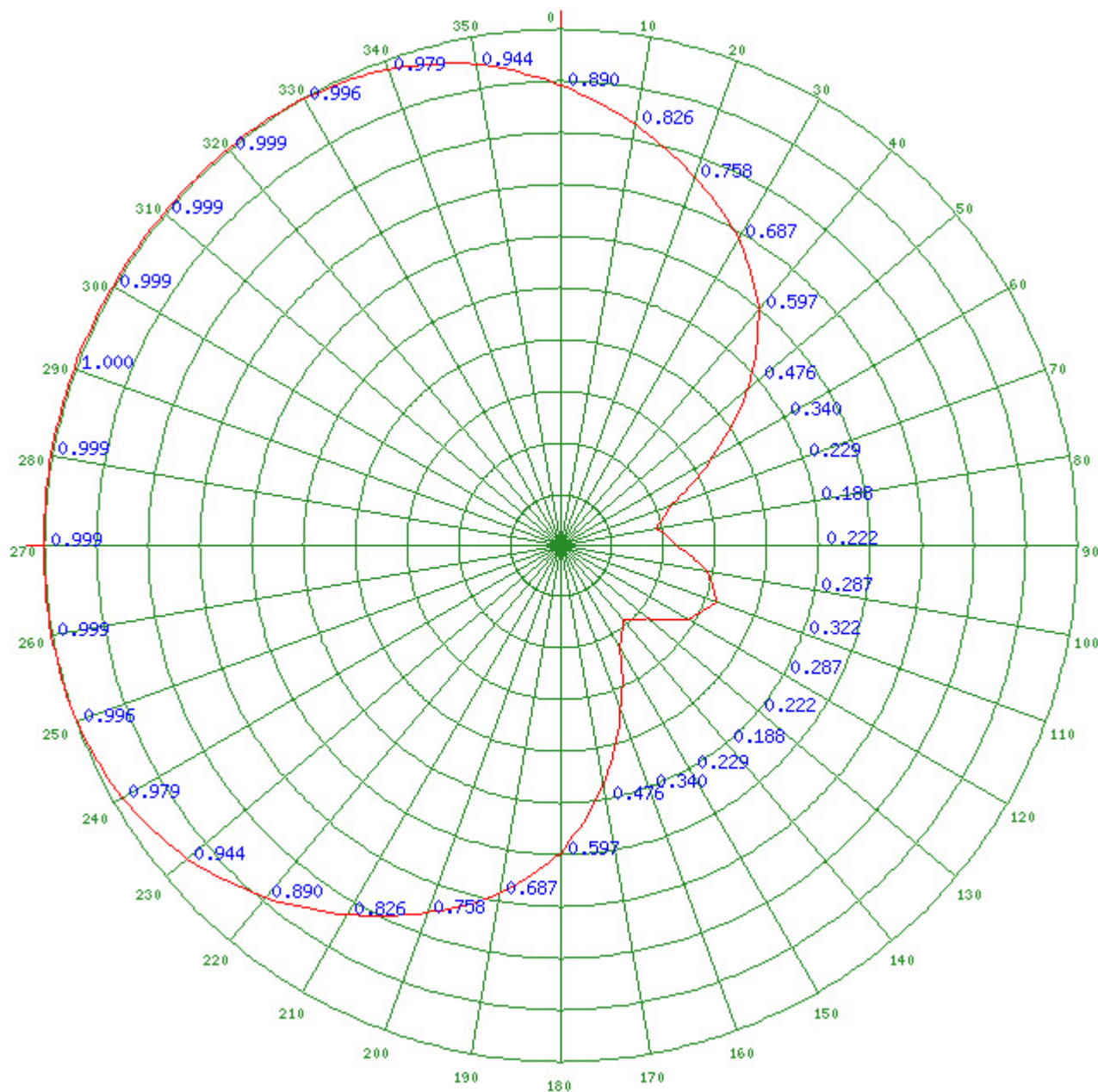
I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 04/16/2013	
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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