

ENGINEERING EXHIBIT

Application for Television Translator Digital Flash-Cut Construction Permit

prepared for

T.V. Reception Improvement District

K07JO Chelan Butte, WA

Facility ID 64467

Ch. 7 (digital) 0.03 kW

T.V. Reception Improvement District (“TVRID”) is the licensee of television translator station K07JO, analog Channel 7, Chelan Butte, WA, Facility ID 64467 (BLTTV-3684). *TVRID* herein proposes herein to flash-cut K07JO to digital operation.

The proposed facility will operate on the current K07JO Channel 7 as digital at 0.03 kW (30 Watts) effective radiated power using a “simple” out of channel emission mask. Figure 1 depicts the coverage contour of the proposed facility as well as that of the K07JO licensed analog facility. The service area overlap shown demonstrates compliance with §73.3572 for a minor change.

The proposed antenna, to be placed on a pole atop an existing mountaintop equipment building, is a Scala model HDCA-10-7, an “off the shelf” directional antenna (FCC CDBS Antenna ID 20799) rotated 307 degrees. The overall height above ground does not exceed six meters, therefore FCC Antenna Structure Registration is not required

A detailed interference study per OET Bulletin 69¹ shows that the proposal complies with the Commission’s interference protection requirements toward all digital television, television translator, low power television, and Class A television stations. The results, summarized in

¹FCC 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.

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 proposed site is located 133 km from the U.S. – Canadian border. The worst-case 13.5 dB μ F(50,10) co-channel DTV-to-DTV interfering contour is depicted in Figure 2 and does not extend across the border. Thus, international coordination should not be necessary.

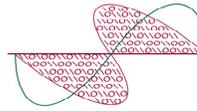
The nearest FCC monitoring station is 226 km distant at Ferndale, WA. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with “quiet” zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3.2 kilometers of the site.

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 the antenna’s theoretical elevation pattern, the maximum calculated signal density near the antenna at two meters above ground level attributable to the proposed facility is 4.9 μ W/cm², which is 2.4 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.

Access to the building rooftop, the rooftop antenna support structure, and any areas within the building that may exceed exposure limits will be controlled by the building owner. *TVRID* will participate in the building’s RF exposure safety program along with other broadcasters and FCC licensees that utilize the mountaintop as a transmission site.

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 any 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. This exhibit is limited to the evaluation of exposure to RF electromagnetic field.

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.

A handwritten signature in blue ink, appearing to read "Joseph M. Davis". The signature is fluid and cursive, with a prominent initial "J" and "D".

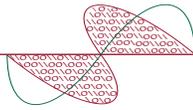
Joseph M. Davis, P.E.
February 17, 2012

Chesapeake RF Consultants, LLC
207 Old Dominion Road
Yorktown, VA 23692
703-650-9600

List of Attachments

Figure 1	Coverage Contour Comparison
Figure 2	Interfering Contour Towards Canada
Table 1	Interference Analysis Results Summary
Form 346	Saved Version of Engineering Sections from FCC Form at Time of Upload

This material was entered February 17, 2012 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.

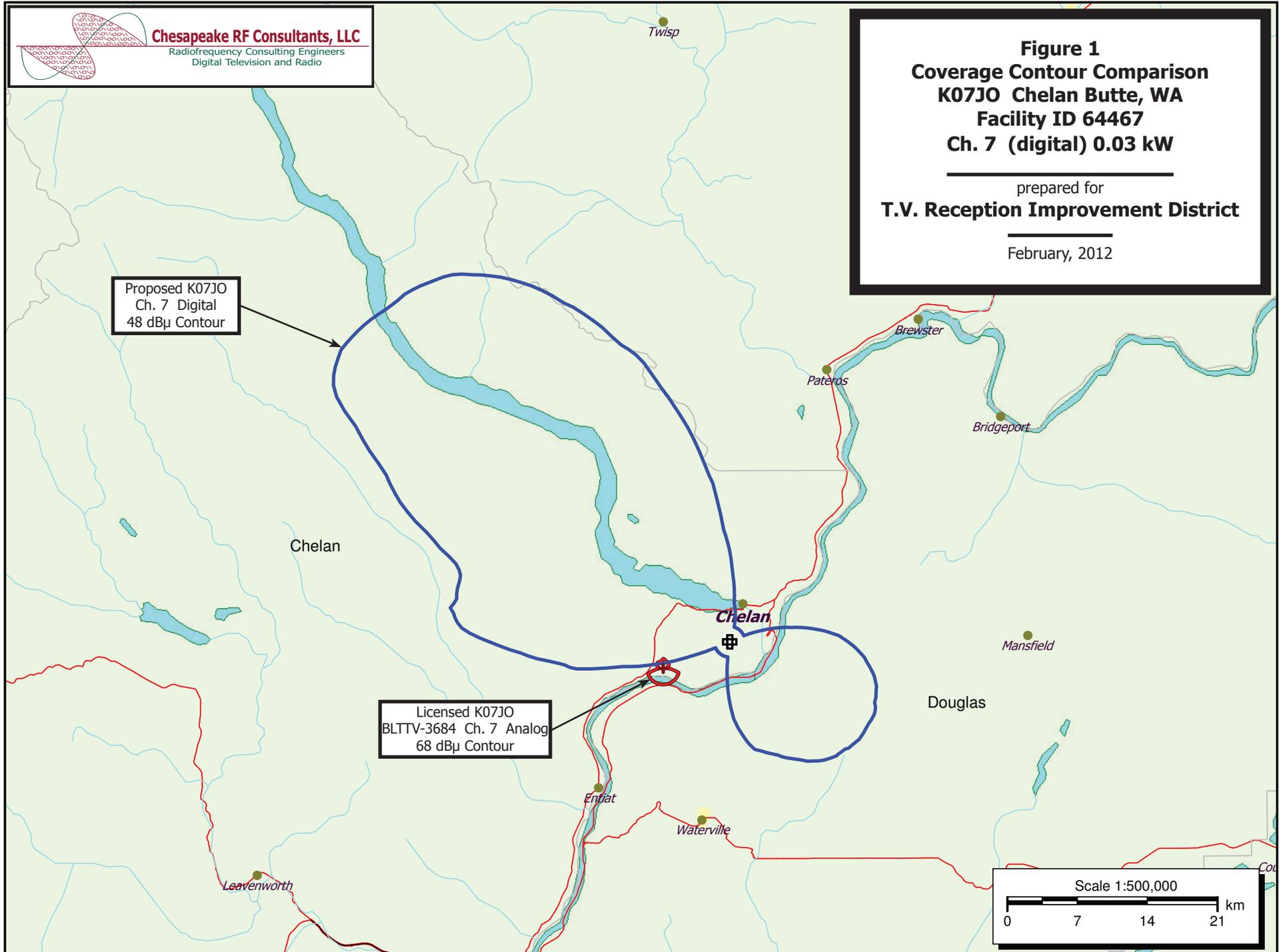


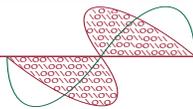
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 1
Coverage Contour Comparison
K07JO Chelan Butte, WA
Facility ID 64467
Ch. 7 (digital) 0.03 kW

prepared for
T.V. Reception Improvement District

February, 2012





Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers
Digital Television and Radio

Kelowna

Figure 2
Interfering Contour Towards Canada
K07JO Chelan Butte, WA
Facility ID 64467
Ch. 7 (digital) 0.03 kW

prepared for
T.V. Reception Improvement District

February, 2012

Canada

United States

Proposed
13.5 dBμ F(50,10)

Spokane

Yakima

Vancouver

Richmond

Bellingham

Victoria

Everett

Seattle

Tacoma

Scale 1:2,500,000

0 30 60 90 km

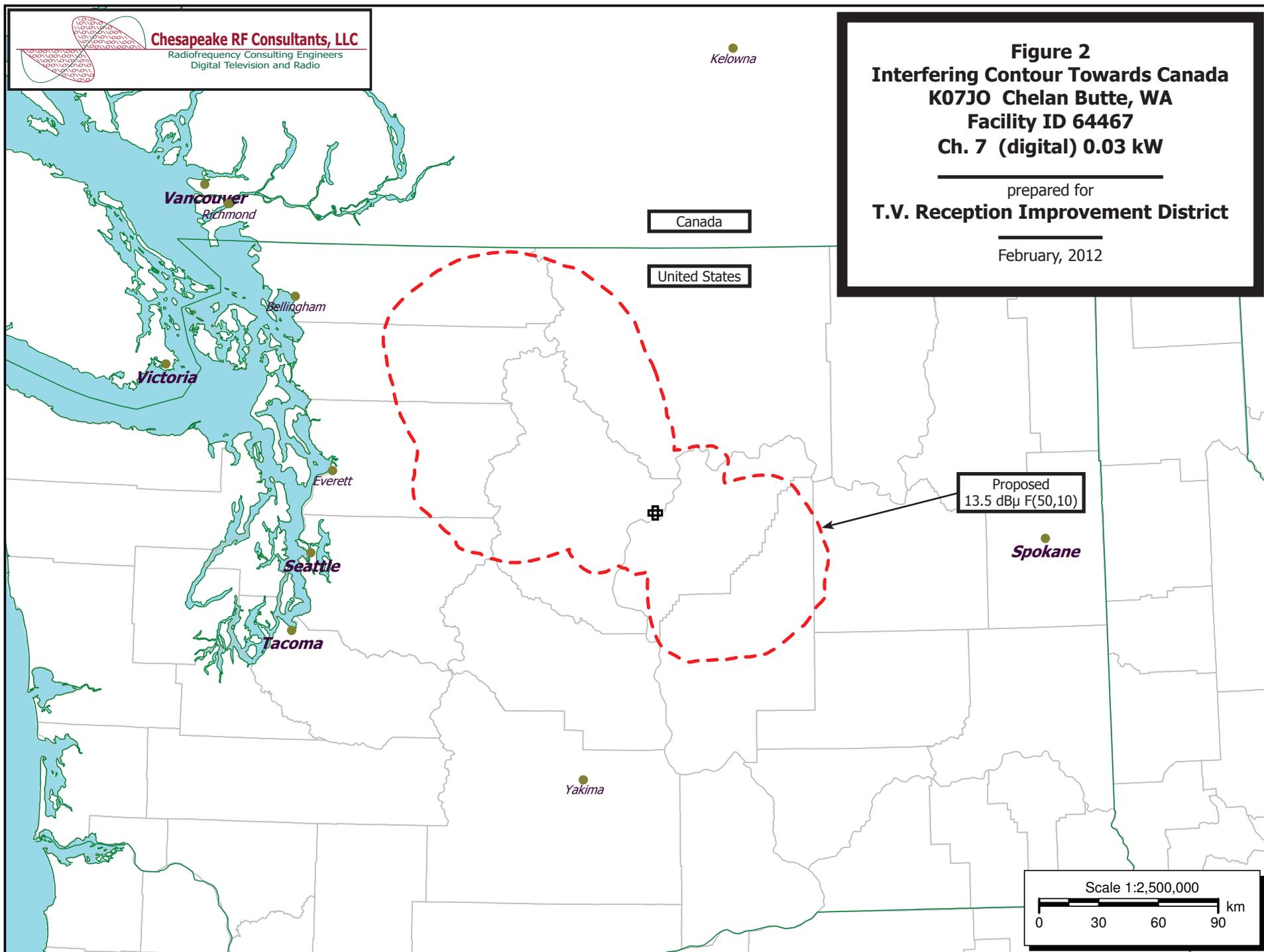


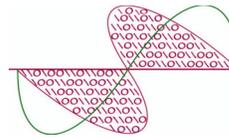
Table 1

Interference Analysis Results Summary

prepared for

T.V. Reception Improvement District

K07JO Chelan Butte, WA



Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers
Digital Television and Radio

K07JO	USERRECORD-01	CHELAN BUTTE	WA US
Channel 07	ERP 0.03 kW	HAAT 548. m	RCAMSL 01172 m
SIMPLE MASK			
Latitude 047-48-26		Longitude 0120-01-59	
Dir Antenna Make CDB Model 00000000020799 Beam tilt N Ref Azimuth 307.			

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
7	K07CP	FERDINAND ID	331.0	LIC	BLTTV-190	---	none
7	K07NL-D	JULIAETTA ID	287.0	APP	BSTA-20110706AAR	---	none
7	K07NL-D	JULIAETTA ID	287.0	LIC	BLDTV-20120117ABE	---	none
7	K07CH-D	PLAINS & PARADISE MT	381.1	LIC	BLDTV-20090123ATE	---	none
7	K07FL-D	THOMPSON FALLS MT	354.0	LIC	BLDTV-20090610ADL	---	none
7	K07YV-D	THE DALLES OR	247.1	LIC	BLDTV-20100511ACL	---	none
7	K07BC	BRIDGEPORT WA	36.0	LIC	BLTTV-38	---	none
7	K07ZC-D	ELLENSBURG/KITTTITAS WA	106.8	LIC	BLDVL-20120125ABR	---	none
7	K07ZL-D	LEAVENWORTH WA	52.6	LIC	BLDTV-20111114AEL	---	none
7	K07DG	OMAK, ETC. WA	89.8	LIC	BLTTV-19950419IE	---	none
7	KSPS-TV	SPOKANE WA	206.1	LIC	BLEDT-20091117ACV	680,470	6 (0.00%)
8	K08AX	ARDENVOIR WA	26.1	LIC	BLTTV-73	---	none
8	DK03CU	COULEE CITY WA	51.5	APP	BSTA-20110708ACP	---	none
8	K08JP	DRYDEN WA	42.3	LIC	BLTTV-19800321IC	---	none
8	K08JP	DRYDEN WA	42.3	CP	BDFCDTV-20120123AMW	---	none
8	KWVC-LD	MALAGA, ECT WA	40.5	LIC	BLDTV-20110222AAG	---	none
8	K08CW-D	MALOTT WAKEFIELD WA	62.7	LIC	BLDTV-20110824ACS	---	none
8	K08BA	ORONDO, ETC. WA	18.7	LIC	BLTTV-70	---	none
8	K08AP-D	PATEROS, MANSFIELD WA	23.6	LIC	BLDTV-20120120ADX	---	none
8	K08CY-D	RIVERSIDE WA	85.9	LIC	BLDTV-20110824ACV	---	none
8	K08OU-D	SEATTLE WA	171.4	LIC	BLDVL-20081117ACQ	---	none
8	K08LU-D	SUNNYSIDE-GRANDVIEW WA	181.4	LIC	BLDTV-20111017ADE	---	none
8	K08CX	TONASKET WA	118.4	CP	BDFCDTV-20101018AAJ	---	none
8	K08CX	TONASKET, ETC. WA	118.4	LIC	BLTTV-19950419IF	---	none
8	K08CX	TONASKET, ETC. WA	118.4	APP	BSTA-20101102ACR	---	none
8	K08AY-D	WINTHROP-TWISP WA	57.1	LIC	BLDTV-20120123AMQ	---	none
8	K08AY-D	WINTHROP-TWISP WA	57.1	APP	BSTA-20111115AOI	---	none

Section III - Engineering (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:
7

2. Translator Input Channel No. :

3. Primary station proposed to be rebroadcast:

Facility Identifier	Call Sign	City	State	Channel
61956	KSPS-TV	SPOKANE	WA	7

4. Antenna Location Coordinates: (NAD 27)
 Latitude:
 Degrees 47 Minutes 48 Seconds 26 North South
 Longitude:
 Degrees 120 Minutes 1 Seconds 59 West East

5. Antenna Structure Registration Number:
 Not Applicable [Exhibit 11] Notification filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 1166 meters

7. Overall Tower Height Above Ground Level: 6 meters

8. Height of Radiation Center Above Ground Level: 6 meters

9. Maximum Effective Radiated Power (ERP): 0.03 kW

10. Transmitter Output Power: 0.003 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 SCA Model HDCA-10-7

b. Electrical Beam Tilt: degrees Not Applicable

c. Mechanical Beam Tilt: degrees toward azimuth degrees True Not Applicable

d. Directional Antenna Relative Field Values: N/A (Nondirectional or Off-the-Shelf)
 Rotation (Degrees): 307 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											

e. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt? Yes No
 [Exhibit 12]
 If Yes, attach an Exhibit (see instructions for details).

[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 Full Service

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 13]

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 Yes No

radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance, an Exhibit is required.	See Explanation in [Exhibit 14]
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. Channels 60-69. 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.	
<p style="text-align: center;">PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.</p>	

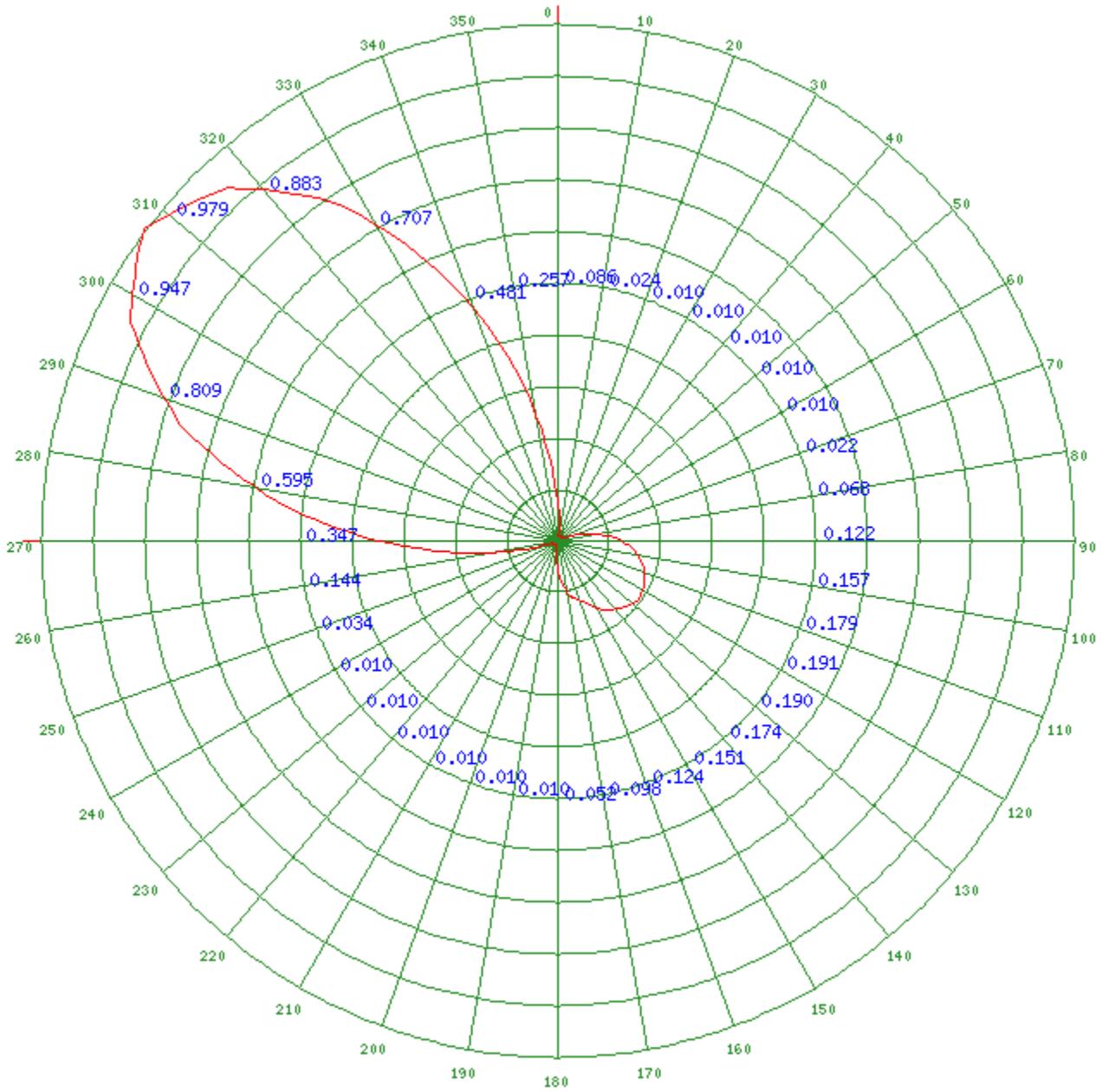
SECTION III PREPARER'S CERTIFICATION

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 2/17/2012	
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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