

ENGINEERING EXHIBIT

Application for Post-Transition Digital Television Station Construction Permit

prepared for

Broadcasting Licenses, L.P.

KMVU-DT Medford, OR

Facility ID 32958

Ch. 26 16.2 kW 441 m

Broadcasting Licenses, L.P. (“*BLLP*”) is the licensee of television station KMVU(TV), analog Channel 26 and digital Channel 27, Medford, OR. *BLLP* herein proposes construction of the KMVU-DT post-transition digital facility on Channel 26. This channel was established in Appendix B of the Seventh Report and Order in MB Docket 87-278.

The instant proposal specifies an effective radiated power (“ERP”) of 16.2 kW at 441 meters antenna height above average terrain (“HAAT”). Due in part to the use of a new directional antenna, the proposed coverage extends beyond that of the Appendix B parameters of 50 kW ERP and 428 meters HAAT. Additionally, the Appendix B facility incorporates a hypothetical directional pattern for KMVU which corresponds generally to the pattern associated with the licensed analog operation, but the pattern has become distorted with the FCC’s “carry over” procedure to digital operation due to the impact of non-uniform terrain and differences in the F(50,50) and F(50,90) propagation curves.

The proposed digital Channel 26 operation will employ a new directional antenna system, a horizontally polarized ERI model ALP12-L8-HSP. The directional antenna’s azimuthal patterns are depicted in **Figure 1**. **Figures 2** and **2A** provide the theoretical vertical plane (elevation) pattern¹.

The proposed digital Channel 26 transmitting antenna will be side-mounted in place of the current analog Channel 26 antenna on the existing KMVU antenna supporting structure. The overall

¹ These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

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 is proposed.

A map is supplied as **Figure 3**, which depicts the standard predicted coverage contours. This map includes the location of Medford, KMVU-DT's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1), as the entire principal community will be encompassed by the 48 dBμ contour.

The proposed KMVU-DT facility's predicted service population provides a 97.9 percent match of the Appendix B facility, as detailed in the table below.

Post-Transition Population Summary

Population Summary (2000 Census) OET Bulletin 69 method	Appendix B	Proposed
Within Noise Limited Contour	288,176	278,122
Not affected by terrain losses	216,674	212,070
Lost to all interference	0	0
Net DTV Service	216,674	212,070
Match of Appendix B	---	97.88%

Freeze Waiver Request

A waiver of the Commission's August 3, 2004 "freeze" concerning expansion in service area² is requested. The proposal complies with the criteria for a freeze waiver request outlined in the Report and Order in the Third Periodic Review.³ KMVU-DT will change channel for post-transition operation and will employ a new antenna.

²Public Notice "Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes," DA 04-2446, released August 3, 2004.

³Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

The map attached as **Figure 4** supplies a comparison of the 41 dBμ digital service contour corresponding to the proposed KMVU-DT facility and the Appendix B parameters. As shown thereon, the amount of contour extension does not exceed five miles at any azimuth.

Absent the waiver, the KMVU-DT ERP would have to be reduced to 2 kW to avoid a contour extension. At this power level, KMVU-DT would achieve an interference-free population (OET Bulletin 69 method) of 183,608 persons. This would represent a reduction in population of 6,815 persons when compared to the 190,426 persons served by the KMVU licensed analog Channel 26. Additionally, the interference-free service population of 183,608 persons is an 84.7 percent match of the KMVU-DT Appendix B population of 216,674, well short of the 95 percent target for post-transition operation.

A detailed interference study per OET Bulletin 69⁴ shows that the proposal complies with the 0.5 percent limit of new interference caused to other stations' Appendix B facilities, as summarized below.

Post-Transition Interference Analysis Summary

Ch	Call Sign	State/City Facility ID	Power (kW) HAAT (m)	Dist (km) Bear (°T)	Appendix B	New Interference	
					Baseline Population (2000 Census)	From Proposal Population	Percent
26	KREN-DT	NV RENO 51493	1000 894	410.3 143.1	--- no interference caused ---		

Protection requirements towards authorized Class A stations are also satisfied. The only potentially affected Class A station is K23EX (Ch. 23, Medford, OR, 19.8 km distant) and an OET Bulletin 69 interference analysis with a 1 km cell size shows that no interference would be caused to K23EX.

⁴FCC 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 standard cell size of 2 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.

Other Allocation Considerations

The nearest FCC monitoring station is 515 km distant at Livermore, CA. 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 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.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed transmitting antenna will be side-mounted on an existing antenna support structure in place of an existing antenna of similar dimensions. 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 18 percent antenna relative field in downward elevations (pattern data shows less than 18 percent relative field at angles 40 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $15.1 \mu\text{W}/\text{cm}^2$, which is 4.2 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 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.

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.
March 21, 2008

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

List of Attachments

- Figure 1 Antenna Horizontal Plane Pattern
- Figure 2, 2A Antenna Vertical Plane (Elevation) Pattern
- Figure 3 Proposed Coverage Contours
- Figure 4 Coverage Contour Comparison
- Form 301 Saved Version of Engineering Sections from FCC Form at Time of Upload

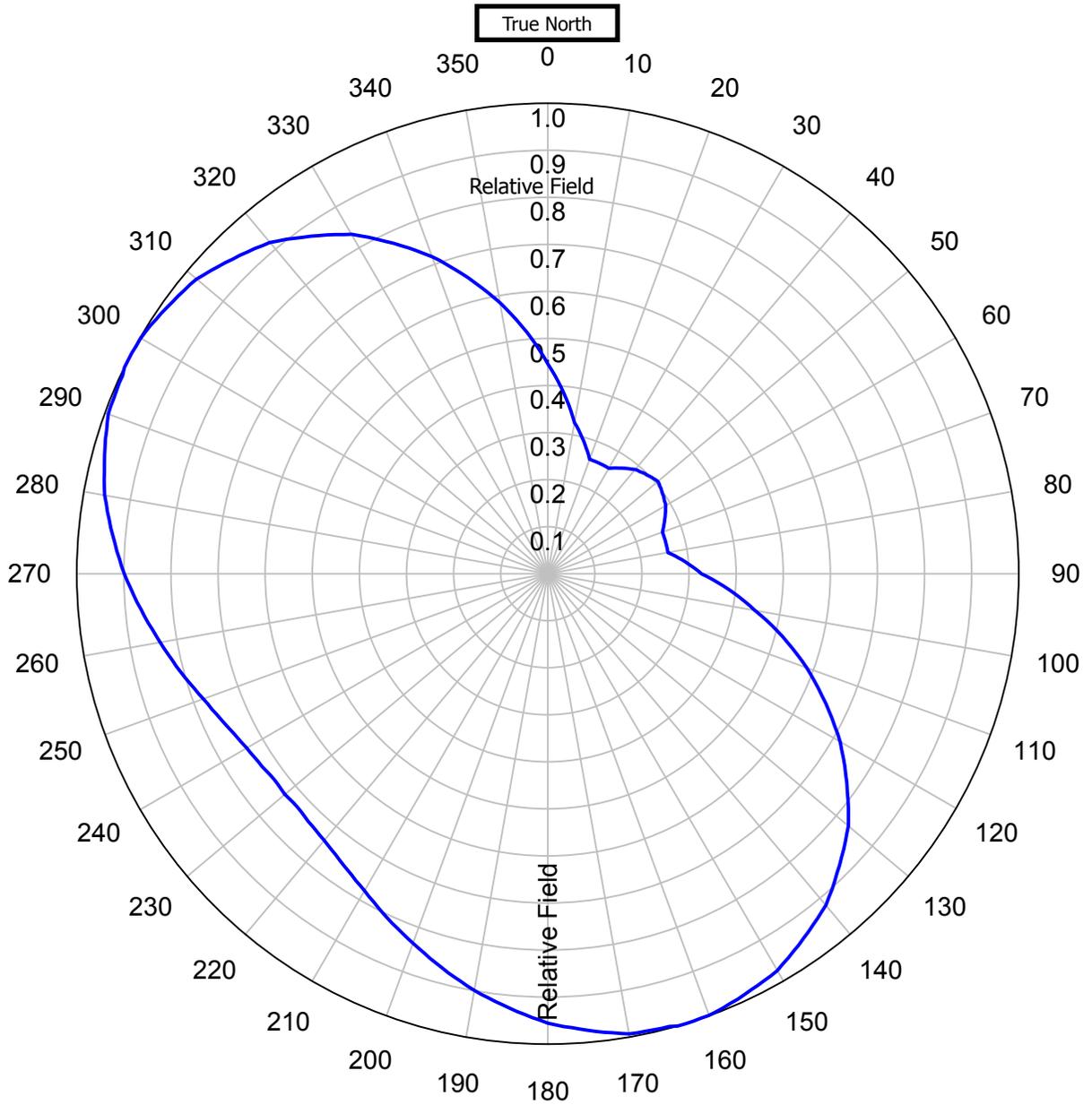
This material was entered March 21, 2008 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.

AZIMUTH PATTERN

Figure 1
Antenna Horizontal
Plane Pattern

Type: ALP-P
Directivity: Numeric 1.88 dBd 2.74
Peak(s) at: _____

Channel: 26
Location: Medford, OR
Polarization: Horizontal
Note: Pattern shape and directivity may vary with channel and mouting configuration.



Preliminary, subject to final design and review.

ELEVATION PATTERN

Type: ALP12L8
Directivity: Numeric dBd
Main Lobe: 12.64 11.02
Horizontal: 5.03 7.02

Channel: 26
Location: Medford, OR
Beam Tilt: -2.00
Polarization: Horizontal

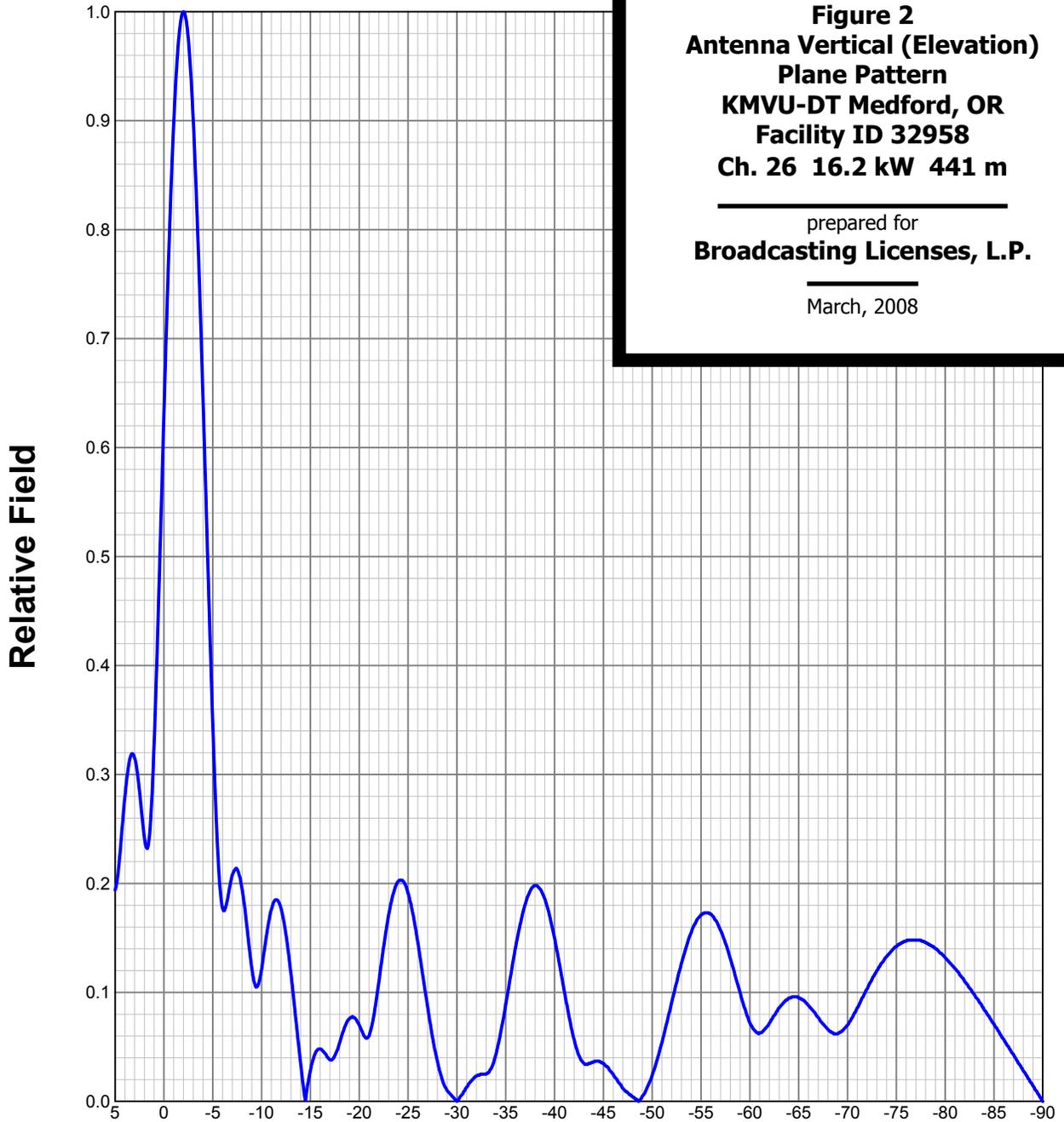


Figure 2
Antenna Vertical (Elevation)
Plane Pattern
KMVU-DT Medford, OR
Facility ID 32958
Ch. 26 16.2 kW 441 m
prepared for
Broadcasting Licenses, L.P.
March, 2008

Preliminary, subject to final design and review.

ELEVATION PATTERN

Type:	ALP12L8		Channel:	26
Directivity:	Numeric	dBd	Location:	Medford, OR
Main Lobe:	12.64	11.02	Beam Tilt:	-2.00
Horizontal:	5.03	7.02	Polarization:	Horizontal

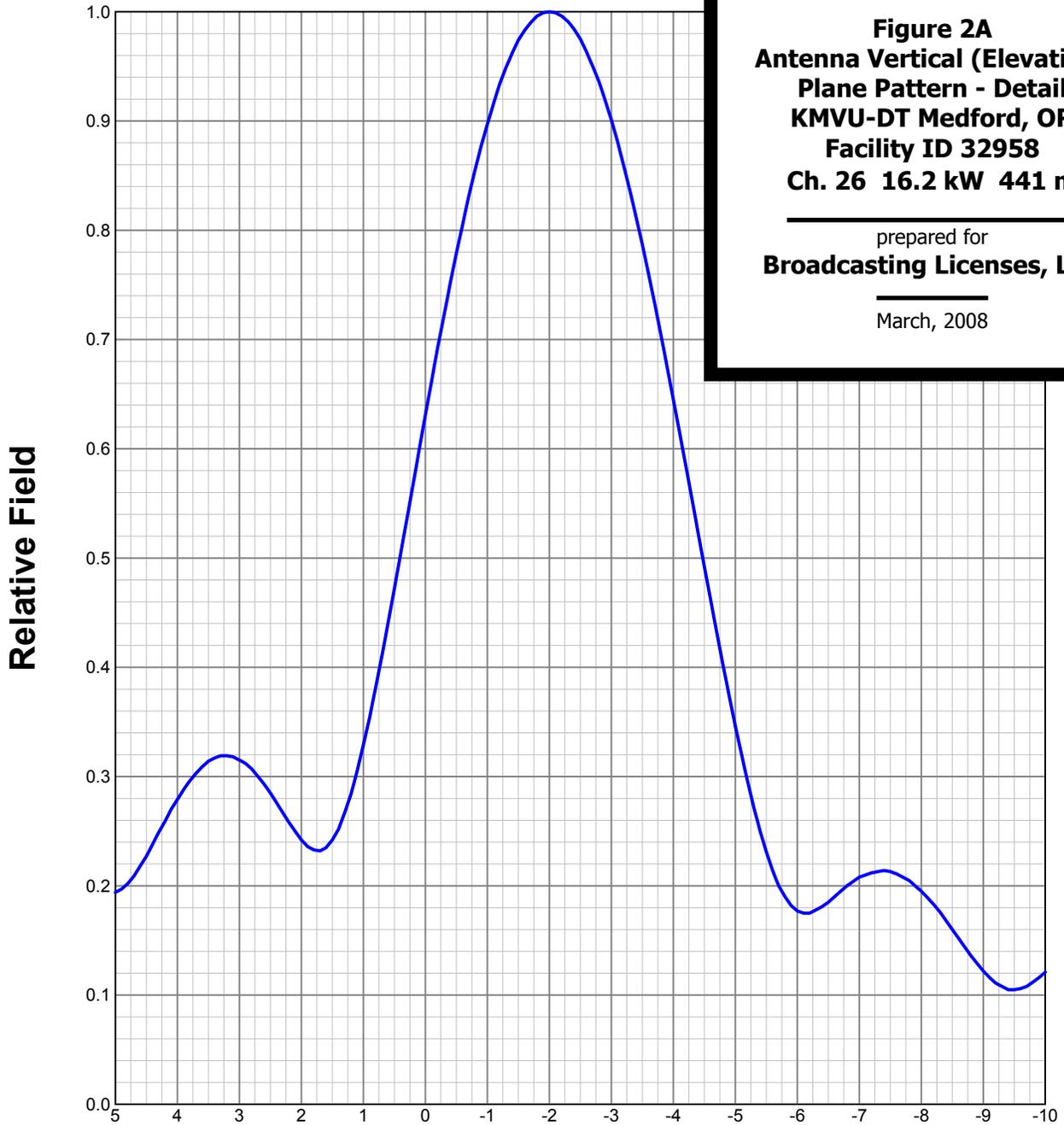
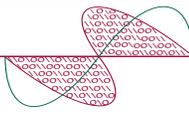


Figure 2A
Antenna Vertical (Elevation)
Plane Pattern - Detail
KMVU-DT Medford, OR
Facility ID 32958
Ch. 26 16.2 kW 441 m

prepared for
Broadcasting Licenses, L.P.

March, 2008

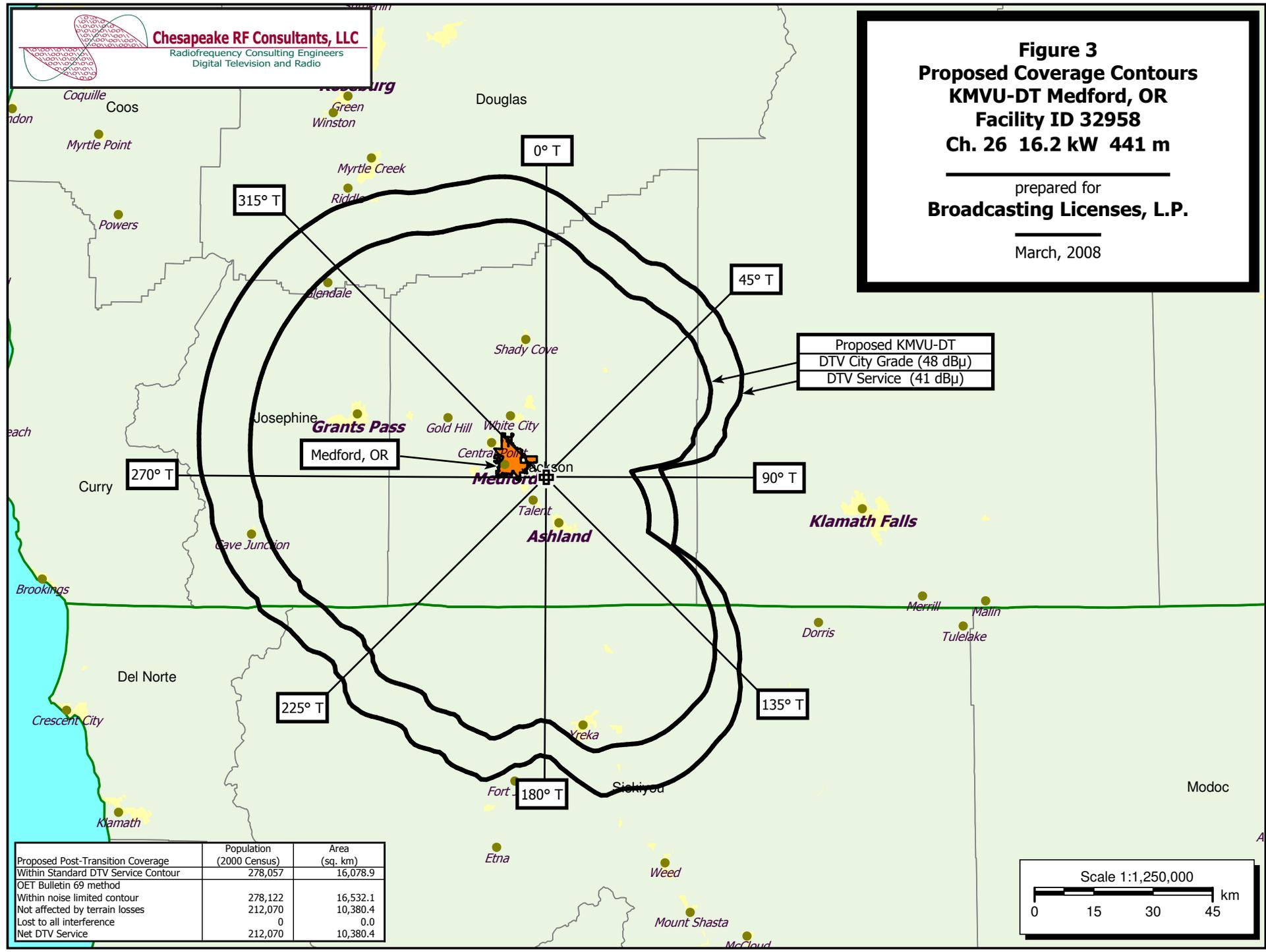
Preliminary, subject to final design and review.



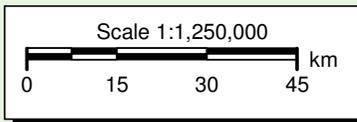
Chesapeake RF Consultants, LLC
 Radiofrequency Consulting Engineers
 Digital Television and Radio

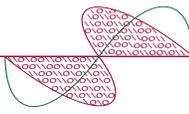
Figure 3
Proposed Coverage Contours
KMVU-DT Medford, OR
Facility ID 32958
Ch. 26 16.2 kW 441 m

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 March, 2008



Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	278,057	16,078.9
OET Bulletin 69 method		
Within noise limited contour	278,122	16,532.1
Not affected by terrain losses	212,070	10,380.4
Lost to all interference	0	0.0
Net DTV Service	212,070	10,380.4

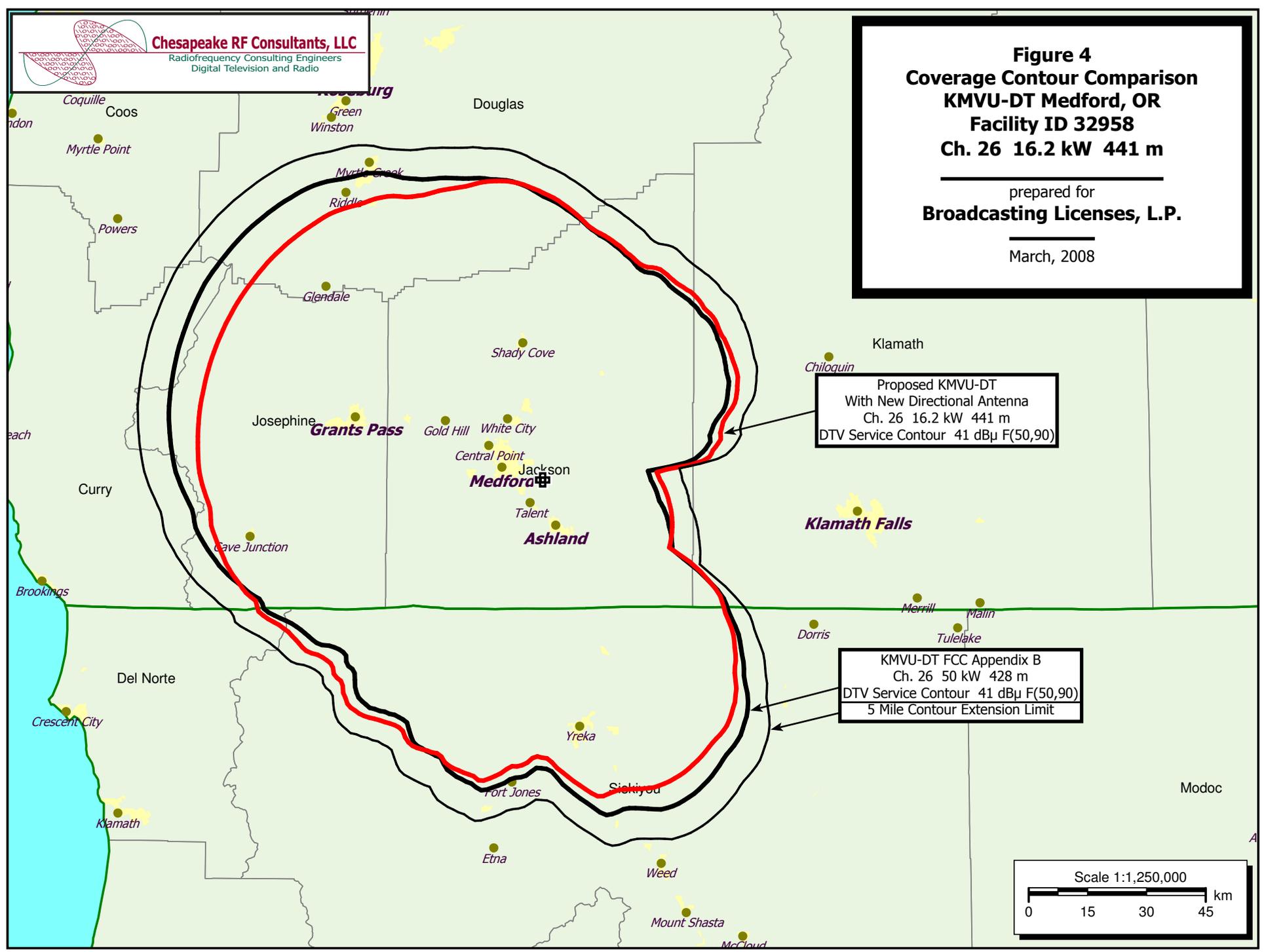




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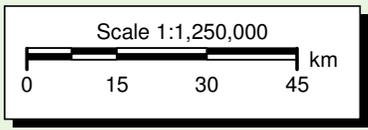
Figure 4
Coverage Contour Comparison
KMVU-DT Medford, OR
Facility ID 32958
Ch. 26 16.2 kW 441 m

prepared for
Broadcasting Licenses, L.P.
 March, 2008



Proposed KMVU-DT
 With New Directional Antenna
 Ch. 26 16.2 kW 441 m
 DTV Service Contour 41 dBμ F(50,90)

KMVU-DT FCC Appendix B
 Ch. 26 50 kW 428 m
 DTV Service Contour 41 dBμ F(50,90)
 5 Mile Contour Extension Limit



SECTION III-D - DTV Engineering	
Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.	
<p>Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.</p> <p>Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.</p>	
1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No
(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No
(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must submit the Exhibit called for in Item 13.	<input checked="" type="radio"/> Yes <input type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	<input checked="" type="radio"/> Yes <input type="radio"/> No

SECTION III-D - DTV Engineering	
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:	DTV 26 Analog TV, if any 26
2. Zone:	<input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III
3. Antenna Location Coordinates: (NAD 27)	Latitude: Degrees 42 Minutes 17 Seconds 54 <input checked="" type="radio"/> North <input type="radio"/> South Longitude: Degrees 122 Minutes 44 Seconds 53 <input checked="" type="radio"/> West <input type="radio"/> East
4. Antenna Structure Registration Number:	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level:	1163 meters
6. Overall Tower Height Above Ground Level:	55 meters
7. Height of Radiation Center Above Ground Level:	36 meters
8. Height of Radiation Center Above Average Terrain :	441 meters

9. Maximum Effective Radiated Power (average power): 16.2 kW

10. Antenna Specifications:

a. Manufacturer ERI Model ALP12-L8-HSP

b. Electrical Beam Tilt:
2 degrees Not Applicable

c. Mechanical Beam Tilt:
degrees toward azimuth
degrees True Not Applicable
Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 42]

d. Polarization:
 Horizontal Circular Elliptical

e. Directional Antenna Relative Field Values: Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]
[Relative Field Values]

10e. Directional Antenna Relative Field Values

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees): No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.446	10	0.326	20	0.259	30	0.259	40	0.289	50	0.305
60	0.289	70	0.259	80	0.259	90	0.326	100	0.446	110	0.585
120	0.717	130	0.833	140	0.919	150	0.974	160	0.999	170	0.993
180	0.955	190	0.899	200	0.836	210	0.778	220	0.739	230	0.729
240	0.739	250	0.778	260	0.836	270	0.899	280	0.955	290	0.993
300	0.999	310	0.974	320	0.919	330	0.833	340	0.717	350	0.585
Additional Azimuths		163	1	297	1						

[Relative Field Polar Plot](#)

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? Yes No [Exhibit 44]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]
If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, 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.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

PREPARERS CERTIFICATION ON SECTION III 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 3/21/2008	
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).

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.

