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

ENGINEERING EXHIBIT

Application for Post-Transition Digital Television Station Construction Permit

prepared for

Bluestone License Holdings Inc.
KTVM-DT Butte, MT
Facility ID 18066
Ch. 6 11.2 kW 591 m

Bluestone License Holdings Inc. ("Bluestone") is the licensee of television station KTVM(TV), analog Channel 6, Butte, MT. The companion Channel 33 digital facility is currently operating pursuant to Special Temporary Authority. *Bluestone* herein proposes construction of the KTVM-DT post-transition digital facility on Channel 6. 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 11.2 kW at 591 meters antenna height above average terrain ("HAAT"), with a nondirectional antenna. Due to the use of a non-directional antenna, the proposed coverage extends beyond that of the Appendix B parameters of 11.2 kW ERP and 591 meters HAAT. The Appendix B facility incorporates a theoretical directional antenna pattern due to the impact of non-uniform terrain and the differences in the F(50,50) and F(50,90) propagation curves.

The proposed digital Channel 6 operation will employ the existing non-directional antenna system licensed for KTVM's analog Channel 6. The antenna is a horizontally polarized RCA model TF-5CM. The antenna is top-mounted on the existing KTVM antenna supporting structure, having FCC Antenna Structure Registration ("ASR") number 1000778. Separately, *Bluestone* is filing a modification to the ASR to correct the site elevation contained therein (to 2513.1 m AMSL, from 2578 m AMSL which actually corresponds to the structure's overall elevation). No change to the overall structure height and no tower work is required to carry out this proposal.

A map is supplied as **Figure 1,** which depicts the standard predicted coverage contours. This map includes the location of Butte, KTVM-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 35 dBμ contour.

The proposed KTVM-DT facility's predicted service population provides a 97.8 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	225,437	226,332
Not affected by terrain losses	192,472	188,319
Lost to all interference	0	0
Net DTV Service	**192,472**	**188,319**
Match of Appendix B	---	**97.84%**

Freeze Waiver Request

A waiver of the Commission's August 3, 2004 "freeze" concerning expansion in service area[1] is requested. The proposal complies with the criteria for a freeze waiver request outlined in the Report and Order in the Third Periodic Review.[2] KTVM-DT will change channel for post-transition operation and will employ its existing analog antenna.

The map attached as **Figure 2** supplies a comparison of the 28 dBμ digital service contour corresponding to the proposed KTVM-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 KTVM-DT non-directional ERP would have to be reduced to 6.8 kW to avoid a contour extension. At this power level, the resulting DTV service contour would not

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

[2]*Third 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.

cover 16,728 persons within an area of 3,276 sq. km that are presently within the KTVM analog Grade B contour. The potential loss area is depicted in **Figure 2A**.

A detailed interference study per OET Bulletin 69[3] shows that the proposal complies with the 0.5 percent limit of new interference caused to other stations' Appendix B facilities, as summarized below. Protection requirements towards authorized Class A stations are also satisfied.

Post-Transition Interference Analysis Summary

Ch	Call Sign	State/City Facility ID	Power (kW) HAAT (m)	Dist (km) Bear (°T)	Appendix B Baseline Population (2000 Census)	New Interference From Proposal Population	 Percent
5	KXLF-TV	MT BUTTE 35959	10.7 588	0.0 90.0	183,000	0	0.00%

Other Allocation Considerations

The nearest FCC monitoring station is 830 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 also located outside the areas specified in §73.1030(a)(1) and §73.1030(b). Thus, notification of the instant proposal to the National Radio Astronomy Observatory at Green Bank, West Virginia, or the Table Mountain Radio Receiving Zone in Boulder County, Colorado is not required. There are no authorized AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site location is within the Canadian coordination zone (333 km to the Canada border), thus further international coordination may be necessary for non-directional operation.

[3]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 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.

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 an assumed 35% antenna relative field in downward elevations, the maximum calculated power density attributable to the proposed KTVM-DT facility at locations near the transmitter site at a height of two meters above ground level is 17.4 $\mu W/cm^2$, which is 8.7 percent of the "uncontrolled / general public" maximum permissible exposure ("MPE") limit and 1.7 percent of the "controlled / occupational" MPE limit. The maximum exposure occurs very near to the KTVM antenna supporting structure, which is located in close proximity to FM and other post-transition DTV transmitting facilities. The applicant considers the site area to be controlled by the existence of warning signs, a fence, and locked gate which serve to restrict access to authorized persons that are aware of the potential for exposure.

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

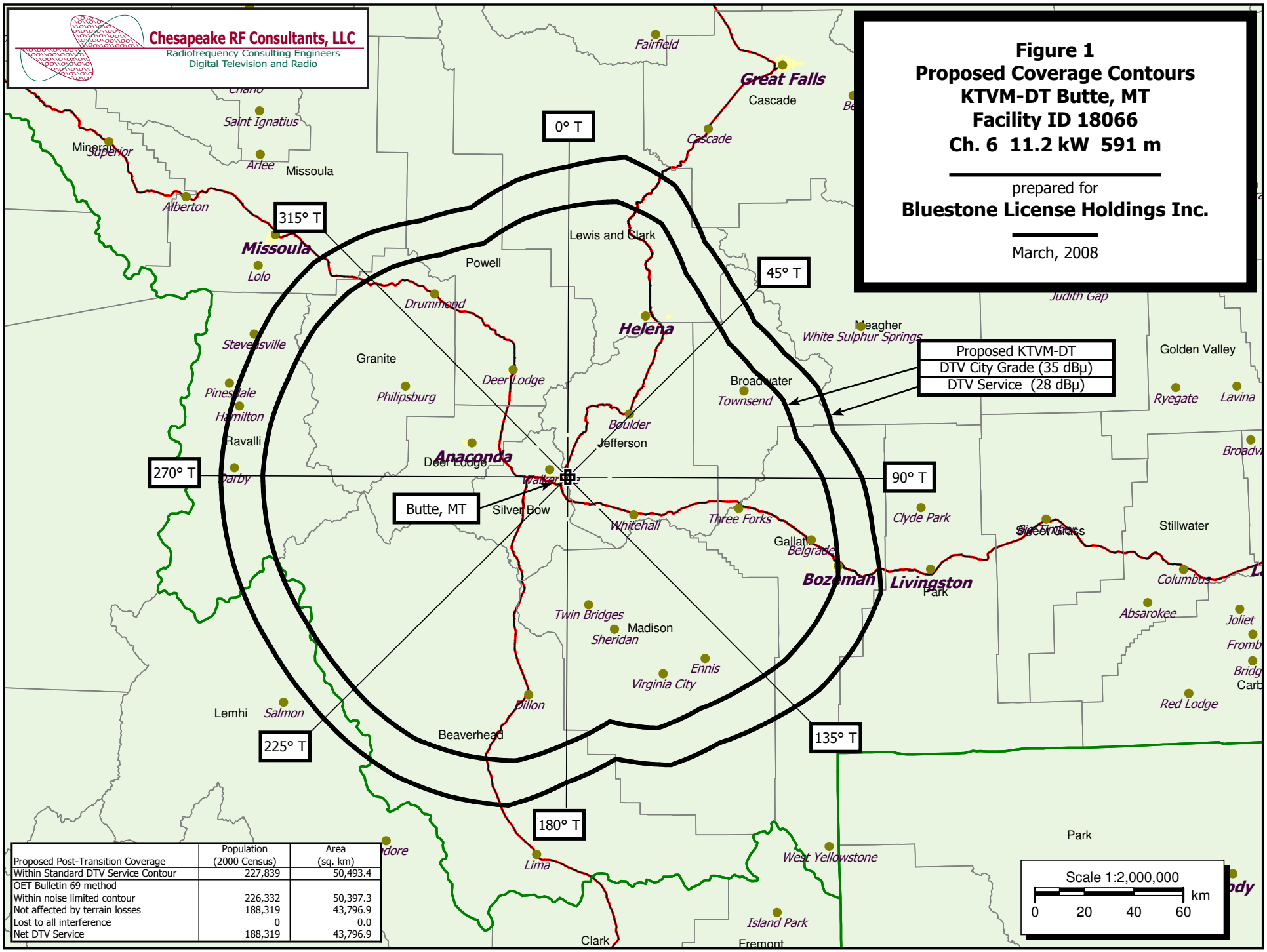
The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.
March 3, 2008

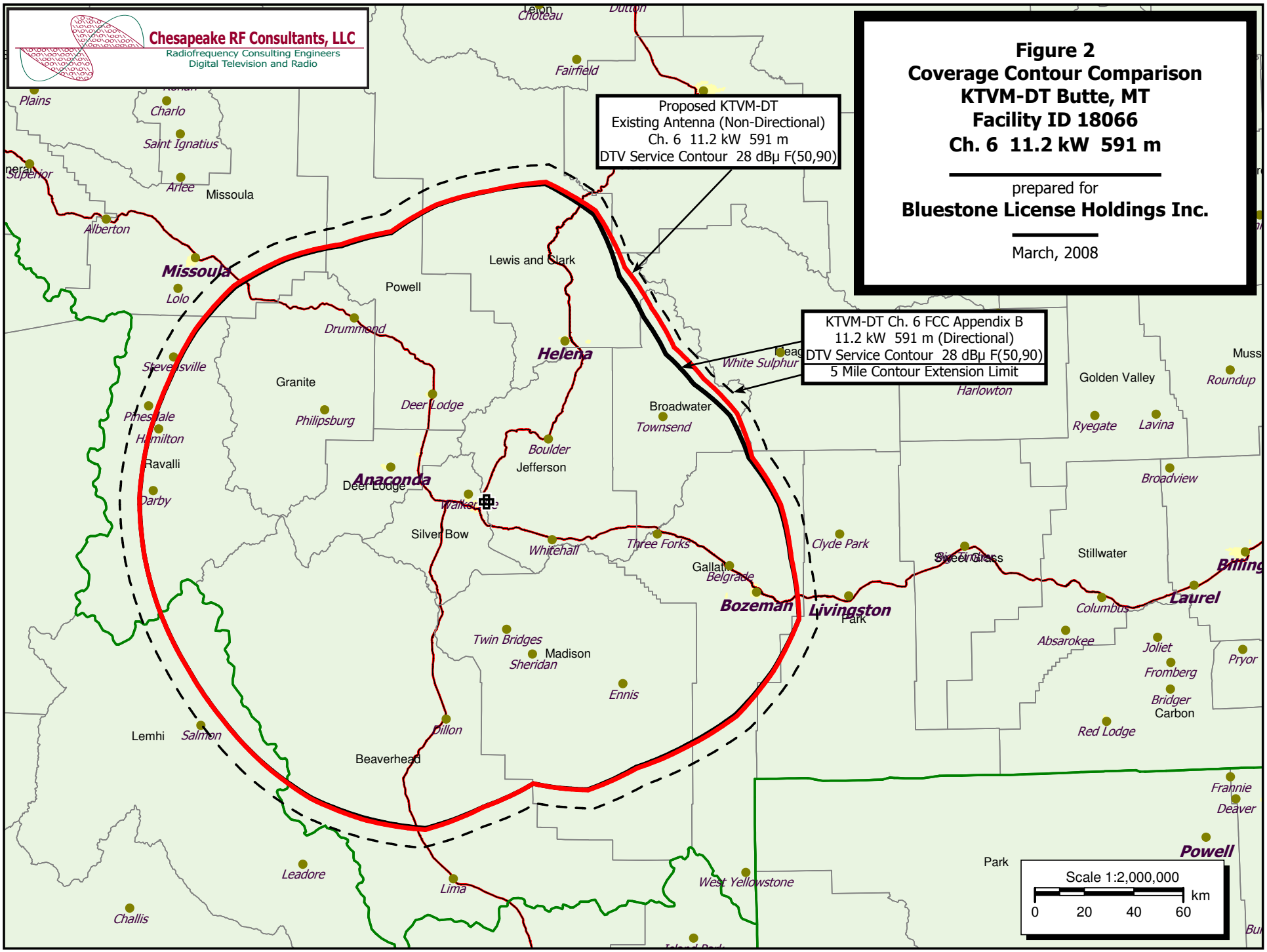
Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

List of Attachments

Figure 1	Proposed Coverage Contours
Figure 2	Coverage Contour Comparison
Figure 2A	Potential Loss Area Without Waiver
Form 301	Saved Version of Engineering Sections from FCC Form at Time of Upload



Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	227,839	50,493.4
OET Bulletin 69 method		
Within noise limited contour	226,332	50,397.3
Not affected by terrain losses	188,319	43,796.9
Lost to all interference	0	0.0
Net DTV Service	188,319	43,796.9


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 2
Coverage Contour Comparison
KTVM-DT Butte, MT
Facility ID 18066
Ch. 6 11.2 kW 591 m
prepared for
Bluestone License Holdings Inc.
March, 2008
Proposed KTVM-DT
Existing Antenna (Non-Directional)
Ch. 6 11.2 kW 591 m
DTV Service Contour 28 dBµ F(50,90)
KTVM-DT Ch. 6 FCC Appendix B
11.2 kW 591 m (Directional)
DTV Service Contour 28 dBµ F(50,90)
5 Mile Contour Extension Limit
Choteau
Fairfield
Plains
Charlo
Saint Ignatius
Arlee
Missoula
Alberton
Lolo
Lewis and Clark
Powell
Drummond
Helena
Granite
Deer Lodge
Philipsburg
Hamilton
Ravalli
Darby
Anaconda
Deer Lodge
Jefferson
Boulder
Broadwater
Townsend
White Sulphur
Harlowton
Golden Valley
Roundup
Ryegate
Lavina
Broadview
Silver Bow
Whitehall
Three Forks
Clyde Park
Belgrade
Bozeman
Livingston
Park
Stillwater
Columbus
Laurel
Absarokee
Joliet
Fromberg
Bridger
Carbon
Red Lodge
Pryor
Twin Bridges
Madison
Sheridan
Ennis
Dillon
Lemhi
Salmon
Beaverhead
Leadore
Lima
Challis
West Yellowstone
Frannie
Deaver
Powell
Scale 1:2,000,000
km
0 20 40 60

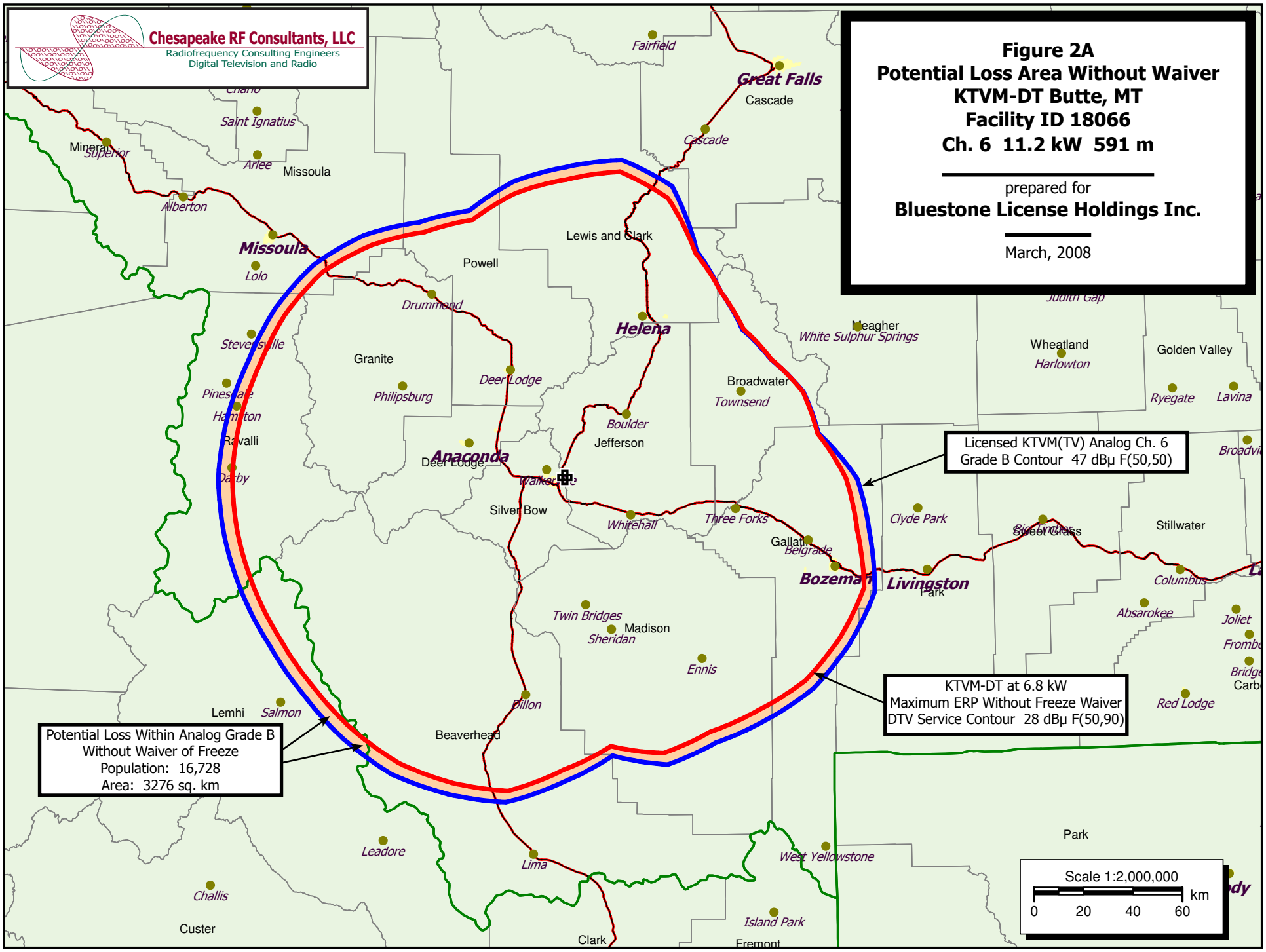

Chesapeake RF Consultants, LLC
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Figure 2A
Potential Loss Area Without Waiver
KTVM-DT Butte, MT
Facility ID 18066
Ch. 6 11.2 kW 591 m
prepared for
Bluestone License Holdings Inc.
March, 2008
Licensed KTVM(TV) Analog Ch. 6
Grade B Contour 47 dBµ F(50,50)
KTVM-DT at 6.8 kW
Maximum ERP Without Freeze Waiver
DTV Service Contour 28 dBµ F(50,90)
Potential Loss Within Analog Grade B
Without Waiver of Freeze
Population: 16,728
Area: 3276 sq. km
Scale 1:2,000,000
0 20 40 60 km
Great Falls
Missoula
Helena
Anaconda
Bozeman
Livingston
Butte
Fairfield
Cascade
Saint Ignatius
Superior
Mineral
Arlee
Missoula
Alberton
Lolo
Lewis and Clark
Powell
Drummond
Stevensville
Granite
Philipsburg
Deer Lodge
Pinesdale
Hamilton
Ravalli
Darby
Deer Lodge
Boulder
Jefferson
Broadwater
Townsend
Judith Gap
Wheatland
Harlowton
Golden Valley
Ryegate
Lavina
Meagher
White Sulphur Springs
Silver Bow
Whitehall
Three Forks
Clyde Park
Gallatin
Belgrade
Stillwater
Columbus
Absarokee
Joliet
Park
Twin Bridges
Madison
Sheridan
Ennis
Dillon
Beaverhead
Lemhi
Salmon
Red Lodge
Leadore
Lima
West Yellowstone
Challis
Custer
Clark
Island Park
Fremont
Park

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.

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.

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.

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.	(●) Yes ( ) 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.	( ) Yes ( ) 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.	( ) Yes ( ) 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").	( ) Yes (●) No ( ) 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.	(●) Yes ( ) No ( ) 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.		(●) Yes ( ) 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.		(●) Yes ( ) 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.		(●) Yes ( ) 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.		(●) Yes ( ) 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 6 Analog TV, if any 6	
2.	Zone: ( ) I (●) II ( ) III	
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 46 Minutes 00 Seconds 27 (●) North ( ) South Longitude: Degrees 112 Minutes 26 Seconds 30 (●) West ( ) East	
4.	Antenna Structure Registration Number: 1000778 ☐ Not Applicable ☐ Notification filed with FAA	
5.	Antenna Location Site Elevation Above Mean Sea Level:	2513 meters
6.	Overall Tower Height Above Ground Level:	64.9 meters
7.	Height of Radiation Center Above Ground Level:	53.3 meters
8.	Height of Radiation Center Above Average Terrain :	591.3 meters
9.	Maximum Effective Radiated Power (average power):	11.2 kW
10.	Antenna Specifications: a. Manufacturer RCA Model TF-5CM	

b. Electrical Beam Tilt:
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. Polorization:
◉ 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]

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? If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.	◉ Yes ○ No [Exhibit 44]
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: 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.	[Exhibit 46]

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 3/3/2008	
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 1 8, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), A ND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).