ENGINEERING EXHIBIT

Request for
Special Temporary Authorization

prepared for

Bluestone License Holdings Inc.
KTVM-TV Butte, MT
Facility ID 18066

Bluestone License Holdings Inc. ("Bluestone") is the licensee of KTVM-TV, Butte, MT, Facility ID 18066. During the pre-transition period, KTVM-TV operated on digital Channel 33 (BLCDT-20080409ABS). A Construction Permit ("CP", BPCDT-20080314ADF) authorizes construction of the KTVM-TV post-transition digital facility on Low-band VHF Channel 6, its former analog channel. KTVM-TV is presently operating on Channel 6 pursuant to the CP and a license application is pending to cover the construction (BLCDT-20090622ADT). This statement supports *Bluestone's* request for Special Temporary Authority ("STA") to increase KTVM-TV's effective radiated power on digital Channel 6.

Since switching to Channel 6 on the transition date, KTVM-TV has received numerous calls regarding reception problems, particularly regarding indoor reception, as described elsewhere in the STA request. Problems with digital Low-Band VHF reception by other stations have been widely publicized since the transition date. It has been found that indoor reception is difficult for digital Low-band VHF stations such as KTVM-TV due to the longer wavelength signal's inability to readily pass through buildings (the windows are smaller than the wavelength size), the ineffectiveness of many indoor antennas many of which were designed to emphasize the shorter wavelengths for UHF reception, and high levels of manmade and environmental noise.[1]

[1] The FCC stated that "our initial assessment that the low VHF channels are less suitable for DTV service because of high levels of atmospheric and man-made noise" (¶50); and "We noted that TV operations on the lower VHF channels 2-6 are subject to a number of technical penalties, including higher ambient noise levels due to leaky power lines, vehicle ignition systems, and other impulse noise sources and interference to and from FM radio service." (¶82) *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service,* Sixth Report and Order, MM Docket 87-268, FCC 97-115, released April 21, 1997.

The proposed STA would allow KTVM-TV to operate with the authorized antenna at 19.2 kW ERP to aid indoor reception, pending further disposition as to how to recover its analog viewers. The proposed STA would increase KTVM-TV's power by 71 percent (2.3 dB). The existing transmitter has capacity to accomplish the power increase upon FCC grant of the STA. The current 2.33 kW transmitter power output will be raised to 4.0 kW.

FCC Staff has informally advised that the STA request should provide a determination as to the power level required to eliminate the reception problem, and that the request should be limited to the power level necessary to restore service. In response, the proposed 2.3 dB increase in power is not expected to entirely solve the problem, but could improve the situation. The proposed power level was chosen as it represents the maximum power level that can be achieved by the existing transmitting equipment's excess capacity. This power level is within that which has already been coordinated with Canada[2] for KTVM-TV. The proposed power increase can be implemented immediately upon FCC approval.

At this point in the transition, it is impossible to determine an exact power level that would be required to solve the problem. Only extensive field testing involving a statistically sound quantity of receiving locations and configurations will yield this information. Such testing would need to consider locations nearby the transmitter all the way to the outer fringe of the intended service area; to consider urban, suburban, and rural areas; and to consider all types of antenna configurations including indoor and outdoor antennas presently in use and available. Absent such a comprehensive set of field tests to establish baseline signal levels for actual reception under these scenarios, a target minimum power level cannot be determined.

Published reports do provide a starting point for the amount of additional power necessary. For example, according to the ATSC,[3] field tests "have shown that the minimum decodable signal levels are well above those planned for." For Low-Band VHF Channel 2, ATSC reports that the

[2] *"Table B: United States Plan of Allotments and Primary Assignments"* Industry Canada, December 15, 2008, indicates that the KTVM-TV post-transition Channel 6 has been coordinated with Canada at 25.6 kW ERP and 591 m HAAT. The KTVM-TV site location is within the Canadian coordination zone (333 km to the Canada border).

[3] "Performance Assessment of the ATSC Transmission System, Equipment and Future Directions" Advanced Television Systems Committee (ATSC), April 12, 2001 Revision 1.0.

required signal strength is at least 12 dB higher than the FCC's specified value of 28 dBμ for service. An IEEE Transactions[4] report regarding the planning factors concludes that there is a "shortfall of at least ... 10 dB in the low VHF range." Both of these reports indicate that the Low-band VHF power levels are insufficient by much more than the 3.6 dB requested herein for KTVM-TV. Thus, it can be concluded that the proposed 2.3 dB power increase does not exceed that necessary to restore service.

The proposed 19.2 kW ERP exceeds the §73.622(f) power limit for 591 m HAAT. A waiver of §73.622(f) is requested if necessary. A coverage contour map is supplied as **Figure 1,** demonstrating compliance with §73.625(a)(1) concerning principal community coverage. Although the contours are plotted in the usual manner, the STA's purpose is not intended to expand KTVM-TV's coverage but rather to provide better service within its principal community and other areas close-in to the facility. For all practical consideration, any area of expanded coverage contour is not expected to actually receive reliable service for the reasons described above.

A detailed interference study per OET Bulletin 69[5] shows that the proposed power increase does not cause impermissible interference to any other station. The only full-power station near enough for consideration is KXLF-TV (Ch. 5, Butte, MT), which is not predicted to receive any interference from the proposed STA operation. Therefore, the proposed STA facility complies with the 0.5 percent interference limit of §73.616(e). The interference study output report is provided as **Table 1**. Protection requirements towards authorized Class A stations are also satisfied.

Regarding RF exposure, calculations per OET Bulletin Number 65 considering 35 percent antenna relative field in downward elevations show that the signal density near the tower at two meters above ground level attributable to the proposed facility is 29.9 $\mu W/cm^2$, which is 14.9 percent of the "uncontrolled / general public" maximum permissible exposure ("MPE") limit and 3.0 percent

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[4] *"Planning Factors for Fixed and Portable DTTV Reception"* Oded Bendov, Yiyan Wu, Charles W. Rhodes, and John F.X. Browne," IEEE Transactions of Broadcasting, Vol. 50, No. 3, September 2004.

[5] FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). 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.

of the "controlled / occupational" MPE limit. The maximum exposure occurs very near to the KTVM-TV antenna supporting structure, which is located in close proximity to FM and other 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

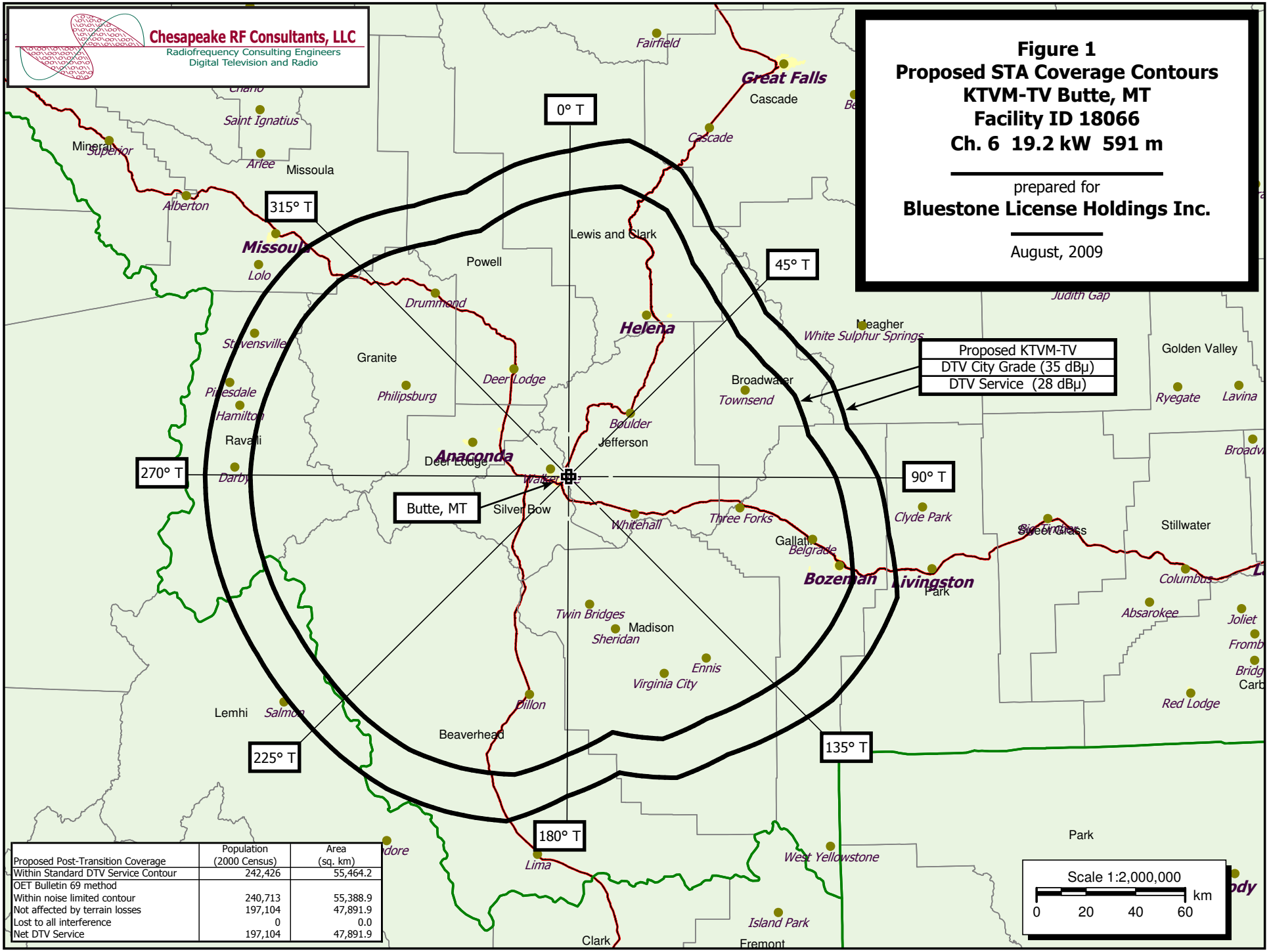
The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.
August 11, 2009

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

List of Attachments

Figure 1 Proposed STA Coverage Contours
Table 1 OET Bulletin 69 Interference Study



Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	242,426	55,464.2
OET Bulletin 69 method		
Within noise limited contour	240,713	55,388.9
Not affected by terrain losses	197,104	47,891.9
Lost to all interference	0	0.0
Net DTV Service	197,104	47,891.9

Table 1 KTVM-TV STA OET Bulletin 69 Interference Study
(worst-case scenarios shown page 1 of 3)

TW Census data selected 2000
Post Transition Data Base Selected /space/software/cdbs/pt_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 08-11-2009 Time: 14:15:53

Record Selected for Analysis

KTVM-D6 USERRECORD-01 BUTTE MT US
Channel 06 ERP 19.2 kW HAAT 590. m RCAMSL 02566 m
Latitude 046-00-27 Longitude 0112-26-30
Status APP Zone 2 Border
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility does not meet maximum height/power limits
Channel 6 ERP = 19.20 HAAT = 590.

Azimuth (Deg)	ERP (kW)	HAAT (m)	28.0 dBu F(50,90) (km)
0.0	19.200	559.8	131.6
45.0	19.200	206.5	104.9
90.0	19.200	476.4	125.1
135.0	19.200	628.9	137.1
180.0	19.200	525.9	128.8
225.0	19.200	819.7	144.6
270.0	19.200	880.6	146.3
315.0	19.200	625.8	136.9

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is within the Canadian coordination distance
Distance to border = 332.6km

Proposed facility is beyond the Mexican coordination distance

Table 1 KTVM-TV STA OET Bulletin 69 Interference Study
(worst-case scenarios shown page 2 of 3)

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 Proposed station is 2.10km from AM station
 SILVER BOW           MT NEW      Status:   Antenna: DA2

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                         Start of Interference Analysis


               Proposed Station
Channel     Call         City/State               ARN
   06      KTVM-D6    BUTTE MT                   USERRECORD01

     Stations Potentially Affected by  Proposed Station

Chan   Call      City/State           Dist(km) Status  Application Ref. No.
 05   KXLF-TV  BUTTE MT                   0.0  APP    BMPCDT    -20080620AFJ
 05   KXLF-TV  BUTTE MT                   0.0  PLN    DTVPLN    -DTVP0022
 05   KXLF-TV  BUTTE MT                   0.0  CP     BPCDT     -20080331AGR

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     Analysis of Interference to Affected Station   1


Analysis of current record
Channel     Call           City/State        Application Ref. No.
   05      KXLF-TV    BUTTE MT                   BMPCDT    -20080620AFJ

     Stations Potentially Affecting This Station

Chan   Call      City/State           Dist(km) Status  Application Ref. No.
 05   KIDA     SUN VALLEY ID            317.2  PLN    DTVPLN    -DTVP0019
 06   KTVM     BUTTE MT                   0.0  PLN    DTVPLN    -DTVP0038
 06   KTVM-D6  BUTTE MT                   0.0  APP    USERRECORD-01
 Proposal causes no interference

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     Analysis of Interference to Affected Station   2


Analysis of current record
Channel     Call           City/State        Application Ref. No.
   05      KXLF-TV    BUTTE MT                   DTVPLN    -DTVP0022

     Stations Potentially Affecting This Station

Chan   Call      City/State           Dist(km) Status  Application Ref. No.
 05   KIDA     SUN VALLEY ID            317.2  PLN    DTVPLN    -DTVP0019
 06   KTVM     BUTTE MT                   0.0  PLN    DTVPLN    -DTVP0038
 06   KTVM-D6  BUTTE MT                   0.0  APP    USERRECORD-01
 Proposal causes no interference

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     Analysis of Interference to Affected Station   3
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Table 1 KTVM-TV STA OET Bulletin 69 Interference Study
(worst-case scenarios shown page 3 of 3)

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Analysis of current record
Channel     Call          City/State        Application Ref. No.
   05      KXLF-TV    BUTTE MT                  BPCDT     -20080331AGR

     Stations Potentially Affecting This Station

Chan   Call      City/State           Dist(km) Status  Application Ref. No.
 05   KIDA     SUN VALLEY ID             317.2  PLN    DTVPLN    -DTVP0019
 06   KTVM     BUTTE MT                    0.0  PLN    DTVPLN    -DTVP0038
 06   KTVM-D6  BUTTE MT                    0.0  APP    USERRECORD-01
 Proposal causes no interference

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     Analysis of Interference to Affected Station   4


Analysis of current record
Channel     Call          City/State        Application Ref. No.
   06      KTVM-D6    BUTTE MT                  USERRECORD-01

     Stations Potentially Affecting This Station

Chan   Call      City/State           Dist(km) Status  Application Ref. No.
 05   KXLF-TV  BUTTE MT                    0.0  APP    BMPCDT    -20080620AFJ
 05   KXLF-TV  BUTTE MT                    0.0  PLN    DTVPLN    -DTVP0022
 05   KXLF-TV  BUTTE MT                    0.0  CP     BPCDT     -20080331AGR

 Total scenarios =   1


Result key:        1
Scenario        1  Affected station        4
Before Analysis

Results for:  6A MT BUTTE               USERRECORD01           APP
   HAAT  590.0 m, ATV ERP   19.2 kW
                                  POPULATION   AREA (sq km)
   within Noise Limited Contour      240713      55388.9
   not affected by terrain losses    197104      47891.9
   lost to NTSC IX                        0          0.0
   lost to additional IX by ATV           0          0.0
   lost to ATV IX only                    0          0.0
   lost to all IX                         0          0.0

 Potential Interfering Stations Included in above Scenario     1


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