

ENGINEERING STATEMENT  
AMENDMENT TO PENDING APPLICATION FOR  
CONSTRUCTION PERMIT FCC FILE  
NO. BDFCDTT-20090630AGT FOR FLASHCUT  
DIGITAL OPERATION  
**K39HD, RED LODGE, MONTANA**  
CHANNEL 39 0.210 KW ERP 2098.2 METERS RC/AMSL  
FACILITY ID 130816  
SEPTEMBER 2009

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington                    )  
  ) ss  
District of Columbia                )

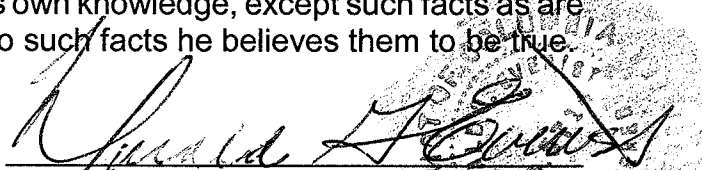
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

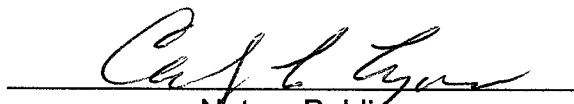
That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

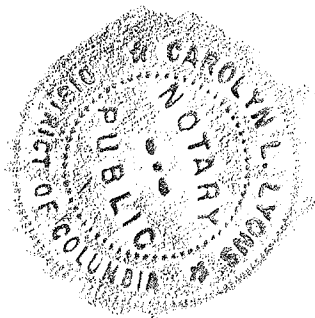
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
\_\_\_\_\_  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 30<sup>th</sup> day of September, 2009.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2013



### Introduction

This engineering statement has been prepared on behalf of KTVQ Communications, Inc. (“KTVQ”), licensee of television translator station K39HD, Red Lodge, Montana (Facility ID 130816). This statement supports the licensee’s amendment to its request for flashcut digital construction permit, FCC File No. BDFCDTT-20090630AGT.

KTVQ hereby requests an amendment to its pending application for construction permit for digital low-power translator facilities of K39HD Channel 39 with an effective radiated power (“ERP”) of 2.5 kW directional at a radiation center above mean sea level (“RCAMSL”) of 2101.7 meters. The purpose of this amendment is to correct the coordinates, antenna radiation center, and overall antenna structure height to correctly reflect the Antenna Structure Registration (“ASR”) database.

### Transmitter Site

The existing antenna will be utilized and no significant alteration of the tower is proposed. The existing tower is located at Yellowstone Bighorn Research Assn. Permanent Campsite, Red Lodge, Montana. There is no change in transmitter site. The Antenna Structure Registration Number (“ASRN”) for the existing tower is 1244479.

The geographic coordinates of the transmitter site are unchanged and remain as follows:

North Latitude: 45° 07' 19"

West Longitude: 109° 16' 11"

NAD-27

Elevation Data

|  |                                |
|--|--------------------------------|
| Antenna Location Site Elevation<br>Above Mean Sea Level  | 2091.2 meters<br>(6860.9 feet) |
| Height of Radiation Center Above<br>Ground Level         | 7 meters<br>(23 feet)          |
| Height of Radiation Center Above<br>Mean Sea Level       | 2098.2 meters<br>(6883.9 feet) |
| Overall Antenna Structure Height<br>Above Ground Level   | 13.7 meters                    |
| Overall Antenna Structure Height<br>Above Mean Sea Level | 2104.9 meters                  |

Note: Slight height differences may result due to conversion to/from metric

Equipment Data

Transmitter: Type Approved–LARCAN or equivalent

Transmission Line: Andrew, Type LDF4-50 24.4 meters (80  
feet)

Antenna: Kathrein-Scala, Model 1X3K723147 panel  
Oriented at N 12°ET

|                                  |          |
|----------------------------------|----------|
| Maximum Effective Radiated Power | 0.210 kW |
|----------------------------------|----------|

|                          |          |
|--------------------------|----------|
| Transmitter Output Power | 0.030 kW |
|--------------------------|----------|

|                               |        |
|-------------------------------|--------|
| Out-of-Channel Emission Mask: | Simple |
|-------------------------------|--------|

Power Data

|              |          |           |
|--------------|----------|-----------|
| Transmitter: | 0.030 kW | -15.23 dB |
|--------------|----------|-----------|

|                                    |       |         |
|------------------------------------|-------|---------|
| Transmission Line Efficiency Loss: | 71.8% | 1.44 dB |
|------------------------------------|-------|---------|

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|                   |          |           |
|-------------------|----------|-----------|
| Input to Antenna: | 0.022 kW | -16.67 dB |
| Antenna Gain:     | 9.55     | 9.80 dB   |
| ERP               | 0.210    | -6.78 dBk |

As indicated above, the transmitter with typical power output of 0.030 kW will deliver 0.022 kW to the input of the antenna. The antenna, having a maximum gain of 9.8 dB will produce a maximum ERP of 0.210 kW. A coverage map providing the protected contour of the proposed digital facility relative to the authorized analog operation of K39HD has been included as Exhibit E-2 of this report.

#### Other Broadcast Facilities

An analysis was completed to determine the presence of stations in the vicinity of the K39HD tower using the July 31, 2009, data contained within the Commission's Consolidated Database System ("CDBS"). Within 0.5 km of the proposed site, there are no authorized FM radio stations, no DTV and NTSC television stations, one authorized FM translator, and one low-power analog television or television translator station other than the licensed K39HD operation. There are no AM facilities within 3.22 km of the existing tower. Although no adverse technical effects are expected due to the proposed changes, the licensee will take measures to resolve any problems proven to be related to the changes proposed in this application.

### Interference Analysis

A study of predicted interference caused by the proposed K39HD digital television translator operation has been performed using the FCC Longley-Rice program. The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Microsoft Windows XP platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2000 census centroids, all studies are based upon data in the current CDBS database update of the FCC's engineering database. A Longley-Rice study was performed with the proposed K39HD low-power digital facilities and all relevant stations listed in the FCC data base. The study results and the included stations are listed in Table I. As can be seen, the proposed operation meets FCC interference criteria for all identified facilities aside from three mutually exclusive applications from 2000. It has been over nine years and these stations have not been settled or resolved and at this juncture may never be further processed.

### FCC Rule, Section 1.1307

The proposed 0.210 kW non-directional operation will utilize a Scala, 1x3k723147 antenna with a center of radiation above ground of 7 meters. The antenna will be top-mounted on an existing tower with an overall height of 13.7 meters above ground. The proposed digital

operation of K39HD will create a radio frequency field level of less than  $15 \mu\text{W}/\text{cm}^2$  at the base of the tower. This level is less than 3.6% of the  $415.3 \mu\text{W}/\text{cm}^2$  Maximum Permissible Exposure (“MPE”) level for the general population and uncontrolled environment, which is less than 1% of the MPE level for the occupational/controlled environment.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radio frequency field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

#### Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the licensee indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.

- (a)(4) The proposed facilities will be located on a tower which was built prior to the adoption of WT Docket No. 03-128 and will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.



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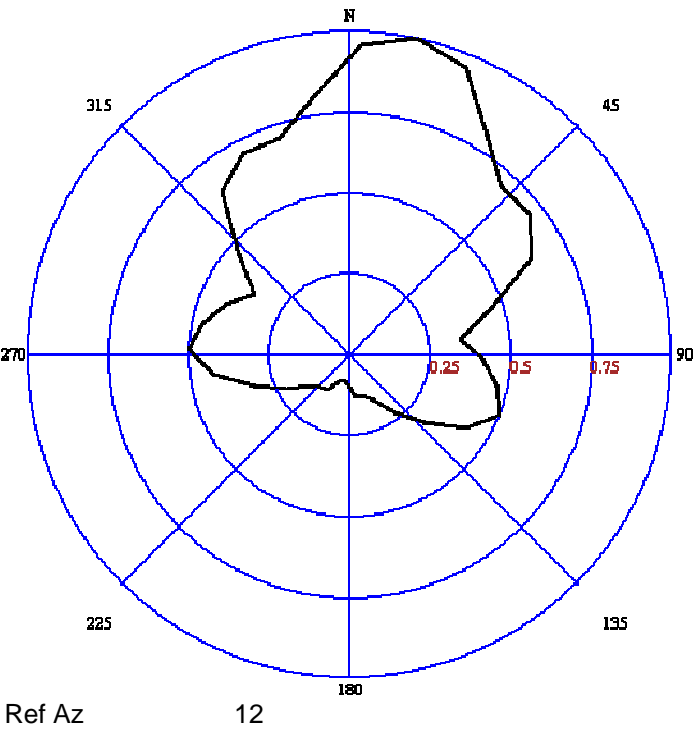
EXHIBIT E-1

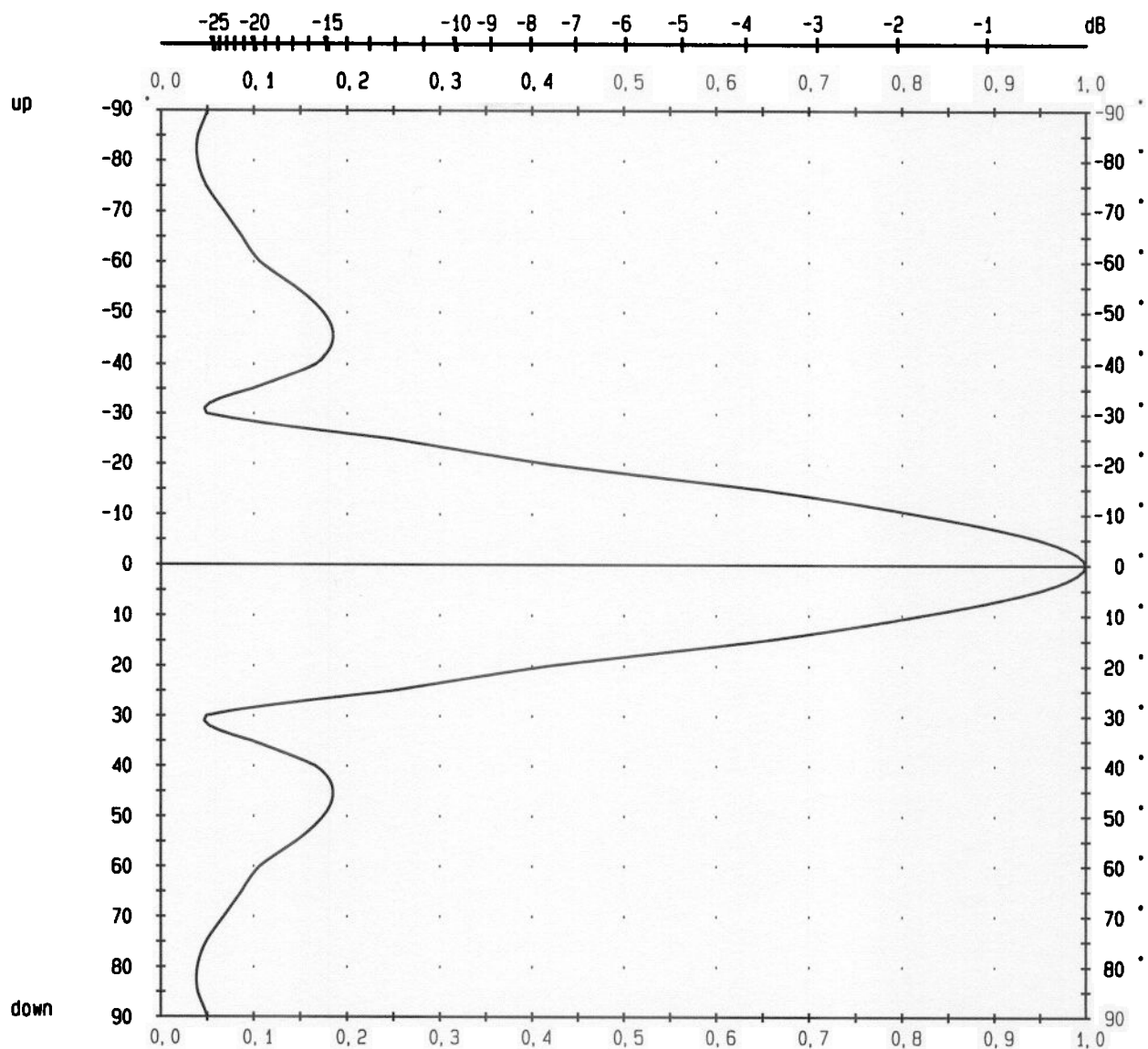
ANTENNA MANUFACTURER DATA

K39HD, RED LODGE, MONTANA

FCC - Antenna ID: 93868

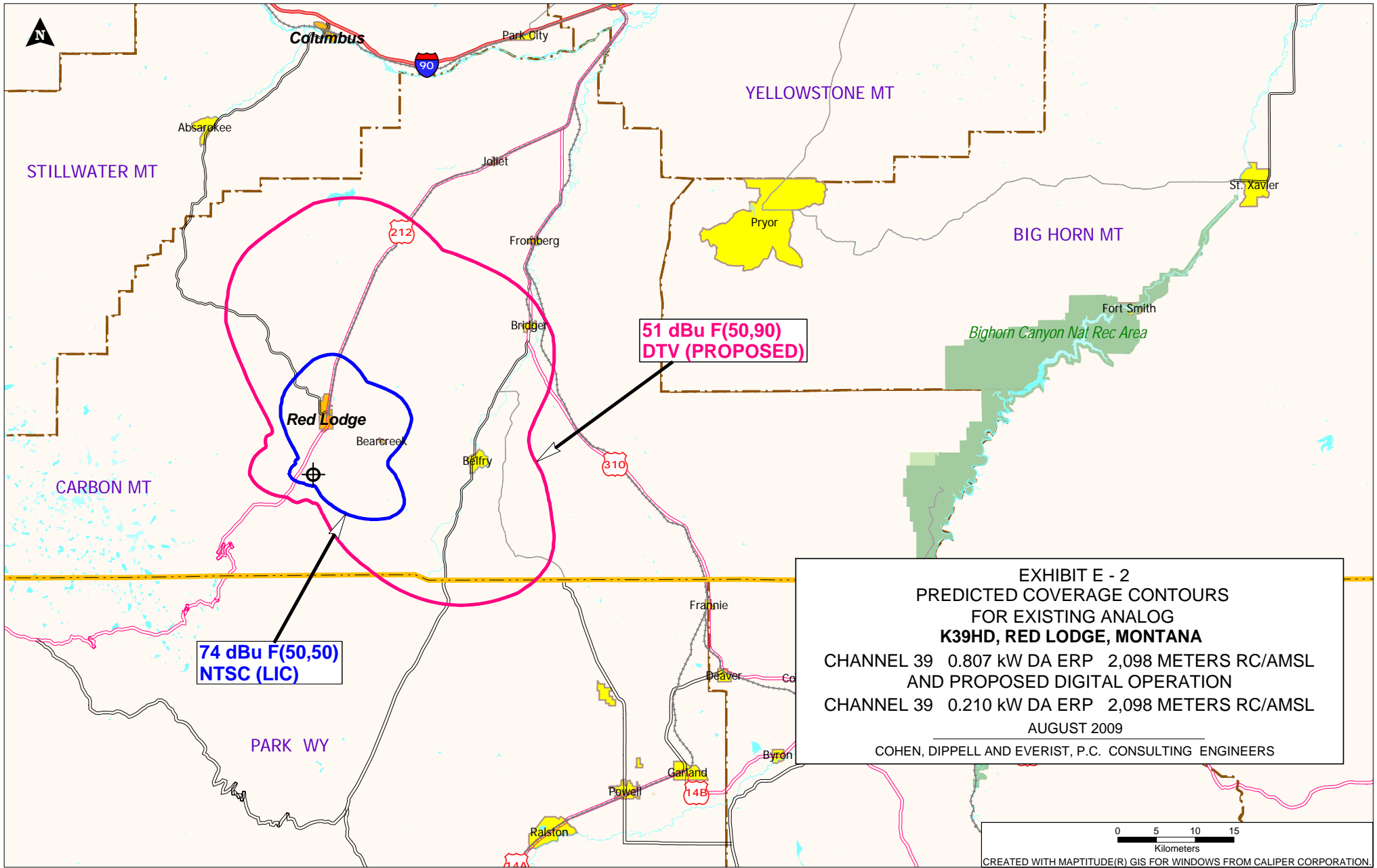
| Azimuth | Field_Value |
|---------|-------------|
| 0       | 1           |
| 10      | 0.958       |
| 20      | 0.802       |
| 30      | 0.702       |
| 40      | 0.705       |
| 50      | 0.642       |
| 60      | 0.464       |
| 70      | 0.349       |
| 80      | 0.413       |
| 90      | 0.465       |
| 100     | 0.5         |
| 110     | 0.425       |
| 120     | 0.312       |
| 130     | 0.224       |
| 140     | 0.156       |
| 150     | 0.133       |
| 160     | 0.13        |
| 170     | 0.091       |
| 180     | 0.082       |
| 190     | 0.091       |
| 200     | 0.13        |
| 210     | 0.133       |
| 220     | 0.156       |
| 230     | 0.224       |
| 240     | 0.312       |
| 250     | 0.425       |
| 260     | 0.5         |
| 270     | 0.465       |
| 280     | 0.413       |
| 290     | 0.349       |
| 300     | 0.464       |
| 310     | 0.642       |
| 320     | 0.705       |
| 330     | 0.702       |
| 340     | 0.802       |
| 350     | 0.958       |





K39HD

|                                |                                 |         |
|--------------------------------|---------------------------------|---------|
| <b>SCALA</b><br>Medford Oregon | 1 x 3 K723147 Panel Array       | Typ Nr. |
| MB 1.7.9 9:3                   | CH-39 special power split 1:4:1 | Bl.:    |



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TABLE I  
INTERFERENCE ANALYSIS  
FOR THE DIGITAL OPERATION OF  
K39HD, RED LODGE, MONTANA  
CHANNEL 39 0.210 KW MAX ERP 2098.2 METERS RC/AMSL  
USING THE SIMPLE EMISSION MASK  
SEPTEMBER 2009

| <u>Channel</u> | <u>Call</u> | <u>City/State</u>   | <u>Dist(km)</u> | <u>Status</u> | <u>FCC File No.</u> | <u>Result</u>   |
|----------------|-------------|---------------------|-----------------|---------------|---------------------|-----------------|
| 24             | K24FL       | COLUMBUS MT         | 56.4            | LIC           | BLTT-20040930ANI    | 0.00%           |
| 25             | K25BP       | BILLINGS MT         | 96              | LIC           | BLTTL-19990723JD    | 0.00%           |
| 32             | NEW         | BILLINGS MT         | 95.6            | APP           | BNPTTL-20000823ABU  | 0.00%           |
| 36             | K36EZ       | BILLINGS MT         | 96              | CP MO         | BMAPTTL-20000831CHP | 0.00%           |
| 36             | K36EZ       | BILLINGS MT         | 95.9            | LIC           | BLTTL-20001227ABC   | 0.00%           |
| 38             | K38KR-D     | BIG TIMBER, ETC. MT | 132.8           | CP            | BDCCDTL-20070419ABB | No interference |
| 38             | NEW         | BILLINGS MT         | 105.4           | APP           | BNPDTL-20090825BFE  | No interference |
| 38             | NEW         | BRIDGER, ETC. MT    | 32.2            | APP           | BDCCDTT-20061030ASC | 0.22%           |
| 39             | K39HJ       | IDAHO FALLS ID      | 281.5           | LIC           | BLTTL-20070604ADB   | No interference |
| 39             | K39GZ       | SODA SPRINGS ID     | 337.5           | CP            | BDFCDTT-20090520AHV | No interference |
| 39             | K39GZ       | SODA SPRINGS ID     | 337.5           | LIC           | BLTT-20051205ADP    | No interference |
| 39             | K69CM       | BIG TIMBER, ETC. MT | 132.8           | CP            | BDISTTL-20060331BLP | No interference |
| 39             | NEW         | BILLINGS MT         | 95.7            | APP           | BNPTTL-20000828BDI  | 0.01%           |
| 39             | NEW         | BILLINGS MT         | 89.5            | APP           | BNPTTL-20000830BAR  | No interference |
| 39             | NEW         | BILLINGS MT         | 105.4           | APP           | BNPTTL-20000824AEC  | 2.71%           |
| 39             | K39JY-D     | BOZEMAN MT          | 166.2           | CP            | BDCCDTL-20070419AAG | No interference |
| 39             | K39JC-D     | BUTTE MT            | 273.3           | LIC           | BLDTL-20090618ADG   | No interference |
| 39             | NEW         | GREAT FALLS MT      | 310.3           | APP           | BNPTTL-20000831BGX  | No interference |
| 39             | NEW         | GREAT FALLS MT      | 309.8           | APP           | BNPTTL-20000828BDH  | No interference |
| 39             | K39JX-D     | LIVINGSTON, ETC. MT | 113             | LIC           | BLDTT-20090826ADU   | No interference |
| 39             | NEW         | CASPER WY           | 345             | APP           | BNPTTL-20000831BVI  | No interference |
| 39             | K39JU       | JACKSON WY          | 218.8           | CP            | BNPTTL-20000829AEQ  | No interference |
| 39             | KKBT-LP     | PINEDALE WY         | 258.2           | LIC           | BLTTL-20050516AAD   | No interference |
| 39             | NEW         | SHERIDAN WY         | 178.4           | APP           | BNPTTL-20000802ADM  | No interference |
| 40             | K40JU-D     | CODY, POWELL * WY   | 67.7            | LIC           | BLDTT-20081009AMQ   | No interference |
| 41             | NEW         | BILLINGS MT         | 94.7            | APP           | BNPTTL-20000828AXC  | 0.00%           |
| 41             | NEW         | BILLINGS MT         | 94.7            | APP           | BNPTTL-20000828AFH  | 0.00%           |
| 41             | NEW         | BILLINGS MT         | 105.4           | APP           | BNPTTL-20000824AED  | 0.00%           |
| 41             | NEW         | BILLINGS MT         | 95.9            | APP           | BNPTTL-20000829AJU  | 0.00%           |

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K39HD, RED LODGE, MONTANA  
CHANNEL 39 0.210 KW MAX ERP 2098.2 METERS RC/AMSL  
USING THE SIMPLE EMISSION MASK  
SEPTEMBER 2009

| <u>Channel</u> | <u>Call</u> | <u>City/State</u> | <u>Dist(km)</u> | <u>Status</u> | <u>FCC File No.</u> | <u>Result</u>   |
|----------------|-------------|-------------------|-----------------|---------------|---------------------|-----------------|
| 41             | NEW         | BILLINGS MT       | 89.5            | APP           | BNPTTL-20000831EIX  | 0.00%           |
| 41             | NEW         | BILLINGS MT       | 91.1            | APP           | BNPTTL-20000831BUK  | 0.00%           |
| 41             | NEW         | BILLINGS MT       | 89.5            | APP           | BNPTTL-20000830BBW  | 0.00%           |
| 41             | NEW         | RED LODGE MT      | 0.3             | APP           | BNPTT-20000831BTI   | No interference |
| 43             | K43LG       | BILLINGS MT       | 89.5            | CP            | BNPTTL-20000831EIS  | 0.00%           |
| 46             | NEW         | BILLINGS MT       | 95.9            | APP           | BNPTTL-20000829AJT  | 0.00%           |

### 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: \_\_\_\_\_
2. Translator Input Channel No. \_\_\_\_\_
3. Station proposed to be rebroadcast:

| Call Sign | City | State | Channel |
|-----------|------|-------|---------|
|-----------|------|-------|---------|

4. Antenna Location Coordinates: (NAD 27)

\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " ☐ N ☐ S Latitude  
\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " ☐ E ☐ W Longitude

5. Antenna Structure Registration Number: \_\_\_\_\_

☐ Not applicable ☐ See Explanation in Exhibit No. ☐ FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters
7. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters
8. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters
9. Maximum Effective Radiated Power (ERP): \_\_\_\_\_ kW
10. Transmitter Output Power: \_\_\_\_\_ kW

11. a. Transmitting Antenna: ☐ Nondirectional ☐ Directional ☐ Directional composite

| Manufacturer | Model |
|--------------|-------|
|--------------|-------|

- b. Electrical Beam Tilt: \_\_\_\_\_ degrees ☐ Not applicable

c. Directional Antenna Relative Field Values:

Rotation: \_\_\_\_\_ ° ☐ No rotation ☐ N/A (Nondirectional)

| Degree              | Value | Degree | Value | Degree | Value | Degree | Value | Degree | Value | Degree | Value |
|---------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| 0                   |       | 60     |       | 120    |       | 180    |       | 240    |       | 300    |       |
| 10                  |       | 70     |       | 130    |       | 190    |       | 250    |       | 310    |       |
| 20                  |       | 80     |       | 140    |       | 200    |       | 260    |       | 320    |       |
| 30                  |       | 90     |       | 150    |       | 210    |       | 270    |       | 330    |       |
| 40                  |       | 100    |       | 160    |       | 220    |       | 280    |       | 340    |       |
| 50                  |       | 110    |       | 170    |       | 230    |       | 290    |       | 350    |       |
| Additional Azimuths |       |        |       |        |       |        |       |        |       |        |       |

**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 ☐

**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 No.

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 radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. An **Exhibit is required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

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:

☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.

☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees 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.

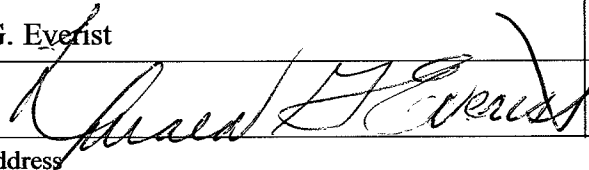
**PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.**



16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- ☐ Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees 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,
- ☐ 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 agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency 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.
- ☐ Pursuant to Section 74.786(e), an 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.

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<br>Donald G. Everist  |   | Relationship to Applicant (e.g., Consulting Engineer)<br>Consulting Engineer |                   |
| Signature<br> |   | Date<br>September 30, 2009   |                   |
| Mailing Address<br>Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100               |   |  |                   |
| City<br>Washington   | State or Country (if foreign address)<br>DC |  | ZIP Code<br>20005 |
| Telephone Number (include area code)<br>(202) 898-0111   |   | E-Mail Address (if available)<br>cde@attglobal.net                           |                   |

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).