EXHIBIT E

ENGINEERING STATEMENT
RE BROADCAST ENGINEERING DATA
APPLICATION FOR MODIFICATION OF DIGITAL
DISPLACEMENT CONSTRUCTION PERMIT,
FCC FILE NO. BDISDTT-20090630AGM
K55CA, CODY, WYOMING
CHANNEL 43 1.0 KW ND ERP 2004.0 METERS RCAMSL
FACILITY ID: 51609
DECEMBER 2011

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 1420 N Street, N.W., Suite One, 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 22nd day of December, 2011.

Notary Public

My Commission Expires: 7/28/2013

This engineering statement has been prepared on behalf of KTVQ Communications, Inc. and is in support of an application for modification of construction permit (FCC File No. BDISDTT-20090630AGM). The outstanding construction permit is for the digital displacement of a currently licensed low-power television ("LPTV") facility. K55CA was granted a DTV operation on Channel 43 for 15 kW non-directional at the same location as the analog facility. The FCC granted the assignment of facilities from Park County to KTVQ Communications, Inc. on October 3, 2011. K55CA is licensed to operate on NTSC television Channel 55 with a maximum visual effective radiated power ("ERP") of 1.18 kW and an antenna radiation center above mean sea level ("RCAMSL") of 2004 meters.

The sole purpose of this application is to propose a reduction in the ERP as authorized by the outstanding construction permit to specify for the "in-core" digital LPTV facilities of 1.0 kW ERP (non-directional) at a RCAMSL of 2004 meters. A coverage map of the proposed facility has been included as Exhibit E-1 of this report. The proposed digital translator will receive KTVQ-DT, Ch. 10, Billings, Montana (Facility ID number 35694) over-the-air and retransmit on Ch. 43.

The existing transmitter site is located on a ridge approximately 18 km northwest northwest of Cody, Wyoming. The existing tower has a total overall structure height above ground of 8 meters (26 feet) and is not registered. The K55CA antenna will be side-mounted on this tower at 6 meters above ground level.

The geographic coordinates of the proposed site are as follows:

North Latitude: 44° 36' 25"

West Longitude: 108° 51' 30"

NAD-27

Equipment Data

Antenna:	Kathrein Scala, Type SL-8-3 paraslot (or equivalent) antenna with 1.75° electrical beam tilt.
Transmission Line:	Dielectric, FlexLine, 7/8", 50 ohm, coaxial TL, 8 meters (26.2 feet)

Power Data
(Simple Mask)

Transmitter output	0.100 kW	-10 dBk
Combined loss efficiency/loss	95.5%	0.2 dB
Transmission line efficiency/loss 18.3 meters (60 feet)	93.8%	0.28 dB
Input power to the antenna	0.089 kW	-10.48 dBk
Antenna power gain	11.22	10.50 dB
Effective Radiated Power	1.0 kW	0 dBk

Elevation Data

Vertical dimension for Channel 43 antenna	6.1 meters 20 feet
Overall height above ground of the proposed antenna structure (including beacon)	8 meters 26.2 feet

Center of radiation of Channel 43 antenna above ground	6 meters 19.7 feet
Elevation of site above mean sea level	1998 meters 6555 feet
Center of radiation of Channel 43 antenna above mean sea level	2004 meters 6574.8 feet
Overall height above mean sea level of proposed tower and antenna (including beacon)	2006 meters 6581.4 feet

Note: Slight height differences may result due to conversion to metric.

Allocation

The proposed digital operation on Channel 43 at Cody, Wyoming, conforms to the requirements of Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b), and 73.1030 of the Commission's Rules. The requirements of these sections regarding this proposed Channel 43 operation of K55CA have met through demonstration of Longley-Rice prediction methodology in the outstanding construction permit for 15 kW. Therefore, with this reduction in transmitter power, the proposed digital low-power television station will not cause any objectionable interference to any existing or proposed full-service DTV station or LPTV/TV translators.

Interference Analysis

A study of predicted interference caused by the proposed K55CA low-power television station operation has not been performed as the reduction of ERP to 1 kW with a simple mask will be well within the interference constraints from that now authorized by the 15 kW operation.

RFF Analysis

There are no AM stations located within two km of the existing K55CA tower site. According to the FCC CDBS database, there are four LPTV stations, including K55CA, located on the same tower. There are no other broadcast stations located within 1 km of the site. The tower property is located in a very remote area, and although the antennas are relatively close to the ground, when the proposed facilities are constructed, the appropriate warning signage will be posted.

The proposed operation, based upon the current OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A, meets the provisions of the FCC radio frequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules.

K55CA proposes to operate with a Scala, Type SL-8-3 antenna with an effective radiated power of 1 kW on UHF Channel 43 with a center of radiation above ground of 6 meters (19.7 feet). As shown, the elevation pattern for this antenna shows a maximum relative field of less than 0.28 towards the ground in the vicinity of the tower. Using this relative field factor and the procedures prescribed in OET Bulletin 65, the maximum RFF resulting from the proposed operation is 164 $\mu W/cm^2$. This is approximately 38% of the 429.3 $\mu W/cm^2$ maximum human exposure to RFF recommended by the FCC guidelines for an uncontrolled environment.

It is anticipated that the total RFF contribution of all LPTV operations at the site may exceed the FCC guidelines for the general population[1], authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if

[1]As noted above, the site is in a remote area approximately 18 km northwest of Cody.

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 the tower. The site is extremely remote and not easily accessible. When the proposed facilities are constructed, the area will be posted with the appropriate warning signs. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Statement

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:

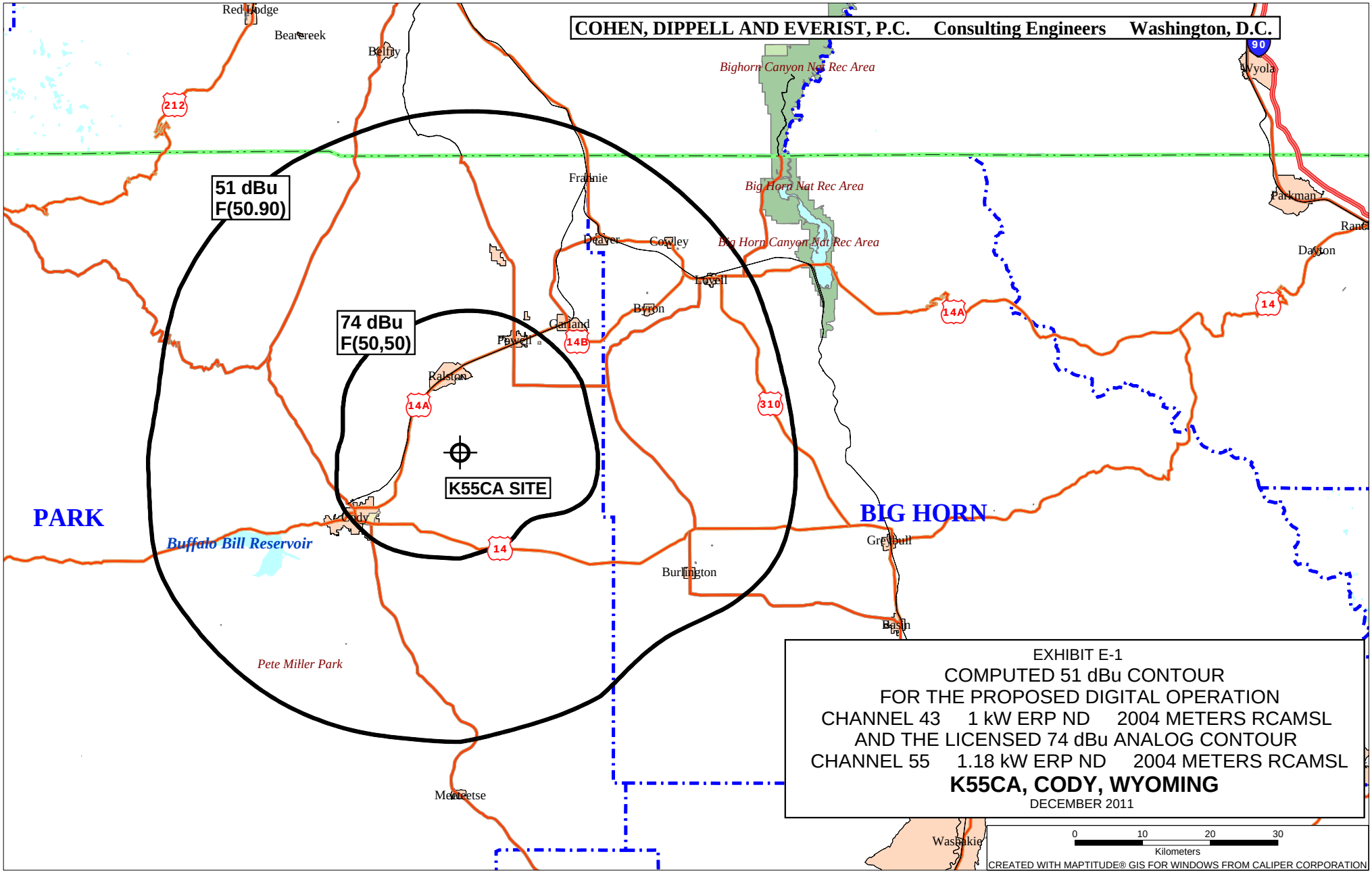
(a)(1)	The proposed facilities are not located in an officially designated wilderness area.
(a)(2)	The proposed facilities are not located in an officially designated wildlife preserve.
(a)(3)	The proposed facilities will not affect any listed threatened or endangered species or habitats.
(a)(3)(ii)	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 located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected 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 at an existing site will not involve a significant change in surface features of the ground in the vicinity of the tower.

(a)(8) The existing tower lighting will remain unchanged.

(b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin 65 (Edition 97-01) and Supplement A. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines. A security fence with a locked gate precludes access to the tower site.


COHEN, DIPPELL AND EVERIST, P.C. Consulting Engineers Washington, D.C.
51 dBu
F(50.90)
74 dBu
F(50,50)
K55CA SITE
PARK
BIG HORN
Buffalo Bill Reservoir
Pete Miller Park
Bighorn Canyon Nat Rec Area
Big Horn Nat Rec Area
Big Horn Canyon Nat Rec Area
Red Lodge
Bearcreek
Belfry
Frannie
Deaver
Cowley
Lovell
Byron
Garland
Powell
Ralston
Cody
Greybull
Burlington
Basin
Wyola
Parkman
Dayton
Meeteetse
Washakie
212
14A
14B
310
14
90
EXHIBIT E-1
COMPUTED 51 dBu CONTOUR
FOR THE PROPOSED DIGITAL OPERATION
CHANNEL 43 1 kW ERP ND 2004 METERS RCAMSL
AND THE LICENSED 74 dBu ANALOG CONTOUR
CHANNEL 55 1.18 kW ERP ND 2004 METERS RCAMSL
K55CA, CODY, WYOMING
DECEMBER 2011
0 10 20 30
Kilometers
CREATED WITH MAPTITUDE® GIS FOR WINDOWS FROM CALIPER CORPORATION

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: 43

2. Translator Input Channel No. 10

3. Station proposed to be rebroadcast: KTVQ Facility ID: 35694

Call Sign	City	State	Channel
KTVQ-DT	Billings	MT	10

4. Antenna Location Coordinates: (NAD 27)

44 ° 36 ' 25 " [X] N [ ] S Latitude
108 ° 51 ' 30 " [ ] E [X] W Longitude

5. Antenna Structure Registration Number: _____

[X] Not applicable [See Explanation in Exhibit No.] [ ] FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 1998 meters

7. Overall Tower Height Above Ground Level: 8 meters

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

9. Maximum Effective Radiated Power (ERP): 1.0 kW

10. Transmitter Output Power: 0.100 kW

11. a. Transmitting Antenna: [X] Nondirectional [ ] Directional [ ] Directional composite

Manufacturer	Model
Scala	SL-8-3

b. Electrical Beam Tilt: 1.75 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											

d. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt? ☐ Yes ☒ No

If Yes, attach an Exhibit (see instructions for details). Exhibit No.

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 [X] 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 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 radio frequency 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. E

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 radio frequency electromagnetic exposure in excess of FCC guidelines.

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

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.

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 ties 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	Relationship to Applicant (e.g., Consulting Engineer)	
Donald G. Everist	Consulting Engineer	
Signature	Date	
	12/22/11	
Mailing Address	Cohen, Dippell and Everist, P.C. 1420 N Street, NW, Suite One	
City	State or Country (if foreign address)	ZIP Code
Washington	DC	20005
Telephone Number (include area code)	E-Mail Address (if available)	
(202) 898-0111	cde@attglobal.net	

WILLFUL FALSE STATEMENTS ON THIS FORM APE 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).