

ENGINEERING STATEMENT
RE TECHNICAL INFORMATION IN SUPPORT OF A
REQUEST FOR CONSTRUCTION PERMIT
FOR DISPLACEMENT FOR
K55BV, BOISE CITY, OKLAHOMA
CHANNEL 20 (Z) 10.7 KW ERP

MARCH 2006

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

COHEN, DIPPELL AND EVERIST, P. C.

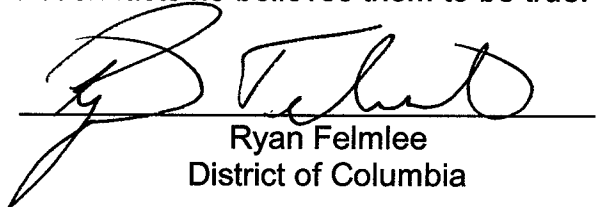
City of Washington)
) ss
District of Columbia)

Ryan Felmlee, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, has successfully completed the Engineer-In-Training examination ("EIT") in the State of Virginia, and is a staff engineer 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;

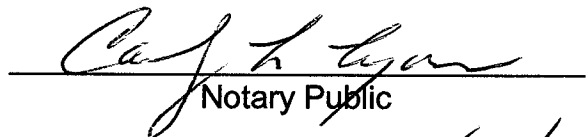
That the attached engineering report was prepared by him or under his supervision and direction and

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.



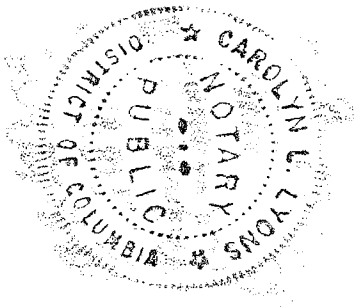
Ryan Felmlee
District of Columbia

Subscribed and sworn to before me this 14th day of March, 2006.



Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Oklahoma Educational Television Authority ("OETA") in support of its request for a construction permit to modify its licensed facilities. Specifically, this application requests a channel change due to displacement of its translator station, K55BV, Boise City, Oklahoma to Channel 20 (Z). K55BV is authorized to operate on channel 55 with a non-directional ERP of 0.100 kW. K55BV proposes to operate on in-core channel 20 (Zero offset) with a non-directional ERP of 10.7 kW.

For convenience, exhibits required by FCC Form 346 are included with this engineering statement.

Antenna Site

The proposed translator antenna will be side-mounted on an existing 370 foot (112.7 meters) tower with FCC Tower Registration No. 1010499. This site is located on U.S. 64, one mile east of Boise City, Oklahoma. The NAD-27 geographic coordinates of the site are:

North Latitude: 36° 43' 29"

West Longitude: 102° 28' 48"

Allocation

The proposed operation on Channel 20 (Z) at Boise City, Oklahoma, conforms to the requirements of Sections 74.703, 74.705, 74.706, 74.707, and 74.709 of the Commission's Rules. The proposed translator station will not cause any objectionable interference to any existing or proposed full-service NTSC or DTV station or LPTV/TV translators. An allocation study for the proposed channel 20(Z) operation of K55BV is attached as Table I.

Transmitting Equipment

The following data provides the pertinent information concerning the proposed operation:

Transmitter: ADC, Type ADS-832A rated for 1.0 kW output power

Antenna: Bogner, B8UO (or equivalent) omni-directional with a maximum gain of 16.6 and 0° electrical beam tilt.

Transmission Line: Andrew, Type HJ7-50A (or equivalent) 120.4 meters (395 feet) 1-5/8", with efficiency of 64.6%

The transmitter with typical power output (TPO) of 1.0 kW will deliver 0.6 kW to the input of the antenna and will produce a maximum effective radiated power of 10.7 kW. The attached Table II shows the computed coverage data for the proposed channel 20 operation of K55BV. The computed F(50,50) 74 dBu coverage contour is attached as Exhibit E-2.

The radiation center of the translator antenna will be located 87.2 meters above ground level (AGL) and 1346.1 meters above mean sea level (AMSL). The attached Exhibit E-1 is a vertical sketch of the structure and the top-mounted translator antenna.

FAA Notification

The FAA has not been notified as this proposal does not create a change in overall tower height.

Other Broadcast Stations

There are no AM, FM, or TV stations within 5 km of the existing tower.

Geographic Restrictions

The proposed site is more than 121 km from the given coordinates of the nearest restricted geographic market.

Environmental Statement

The proposed antenna will be side-mounted on an existing guyed tower.

According to the applicant, the antenna site is not located near any known wilderness area, wildlife preserve, historic place, or Indian religious site. The proposed facilities are not located in a flood plain area. The proposed facilities will not affect the threatened or endangered species or the critical habitats. Installation of the proposed antenna will not involve any significant changes in the surface features in excess of the current FCC guidelines.

For the reasons stated above, the translator proposal does not involve any action specified in Section 1.1307; therefore, under Section 1.1306, it is categorically excluded from environmental processing.

An evaluation has been made to determine compliance with the FCC specified standards for human exposure to radiofrequency fields as set forth in the OET Bulletin No. 65, Edition 97-01, August 1997. For a maximum effective radiated power of 10.7 kW (relative field factor of 0.300) and a radiation center of 87.2 meters above ground level, the proposed translator operation would have a maximum of 0.98 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) radiofrequency field at two meters above the base of the tower. This is less than 0.1 percent of the maximum permissible exposure (MPE) limit for controlled/occupational exposure and less than 0.3% of the MPE limit for uncontrolled/general public exposure.

It is believed that members of the public and personnel working near the proposed transmitting facility will not be exposed to levels above those prescribed by the current FCC guidelines. With respect to work performed near the radiating elements, the applicant will establish procedures in coordination with other operating stations to ensure that the workers are not exposed to levels of radiofrequency field levels exceeding current FCC guidelines for controlled exposure.

TABLE I
ALLOCATION STUDY
FOR THE PROPOSED OPERATION OF
K55BV, BOISE CITY, OKLAHOMA
CHANNEL 20(Z) 10.7 KW ERP
MARCH 2006

<u>Callsign</u>	<u>Channel</u>	<u>City</u>	<u>FCC File No</u>	<u>Class</u>	<u>Type</u>	<u>ERP</u> kW	<u>Bearing</u> Degrees	<u>Distance</u> km	<u>Status</u>
KVIH-DT	20	CLOVIS	BPCDT19991029ACF	DTV	CP	1000	194.7	290.7	Clear
KVIH-TV*	20	CLOVIS	DTV ALLOTMENT	DTV	LIC	598	194.7	290.6	Clear
KVIH-DT	20	CLOVIS	BDSTA20020411ABG	D-STA	LIC	0.26	194.8	262.4	Clear
K20CV	20 Z	RATON, ETC.	BLTT20031007ACJ	LPTV	LIC	1.029	269.0	172.5	Clear
KACV-TV*	21	AMARILLO	DTV ALLOTMENT	DTV	LIC	1000	158.8	164.7	Clear
KAMR-TV*	19	AMARILLO	DTV ALLOTMENT	DTV	LIC	1000	159.8	166.8	Clear
KAMR-DT	19	AMARILLO	BPCDT19991029AIL	DTV	CP	1000	159.8	166.8	Clear
KBSH-DT	20	HAYS	BPCDT19991015ABF	DTV	CP	1000	48.0	365.8	Clear
KBSH-TV*	20	HAYS	DTV ALLOTMENT	DTV	LIC	1000	48.0	365.8	Clear
KBSH-TV*	20	HAYS	DTV ALLOTMENT	DTV	LIC	1000	48.0	365.8	Clear
K20BR	20	GAGE, ETC.	BLTVL19880304IJ	LPTV	LIC	0.815	96.8	243.8	Clear
KAMR-DT	19	AMARILLO	BDSTA20030114ACC	D-STA	LIC	8.5	158.8	164.7	Clear
KTVD	20 Z	DENVER	BLCT19881219KP	NTSC	LIC	5000	324.7	405.7	Clear
KTVD	20 Z	DENVER	BPCT20020813ABA	NTSC	CP	5000	325.1	411.6	Clear
K58AZ	20 Z	LAS VEGAS	BLTT20040421ACE	LPTV	LIC	1.18	244.3	278.8	Clear
K56DM	20	TURKEY, ETC.	BPTT20010724AAE	LPTV	CP	0.47	154.1	286.2	Clear
K53ET	20 +	EAGLE NEST/ANGELFIRE	BLTT20010928ABE	LPTV	LIC	1.38	268.3	245.3	Clear

TABLE II
COMPUTED COVERAGE DATA
FOR THE PROPOSED OPERATION OF
K55BV, BOISE CITY, OKLAHOMA
CHANNEL 20 (Z) 10.7 KW
MARCH 2006

<u>Radial</u> <u>Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u>	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> KW	<u>Distance to Contour</u> <u>F(50,50)</u> <u>74 dBu</u> <u>Grade A</u> km
0	1249.8	96.3	0.272	10.7	14.3
45	1238.1	108.0	0.288	10.7	15.3
90	1229.7	116.4	0.299	10.7	16.0
135	1232.3	113.8	0.295	10.7	15.8
180	1255.6	90.5	0.263	10.7	13.8
225	1274.7	71.4	0.234	10.7	12.3
270	1292.3	53.8	0.203	10.7	10.1
315	1289.3	56.8	0.209	10.7	11.1
Average	1257.7	88.4			

*Based on data from FCC 3-second data base

NTSC Channel 20 (506-512 MHz)
Average Elevation 3.2 to 16.1 km 1257.7 meters AMSL
Center of Radiation 1346.1 meters AMSL
Effective Radiated Power 10.7 kW (10.29 dBk)

North Latitude: 36° 43' 29"
West Longitude: 102° 28' 48"

(NAD-27)

ABOVE GROUND

ABOVE MEAN SEA LEVEL

112.7 METERS (370') ———
106.6 METERS (350') ———

C/R 87.2 METERS (286') ———

———— (4500') 1371.6 METERS
———— (4480') 1365.5 METERS

———— (4416') 1346.1 METERS C/R

*PAINTING AND LIGHTING
ARE IN ACCORDANCE WITH
F.A.A. RULES AND REGULATIONS.*

TOWER REGISTRATION
No. 1010499

GUYED TOWER

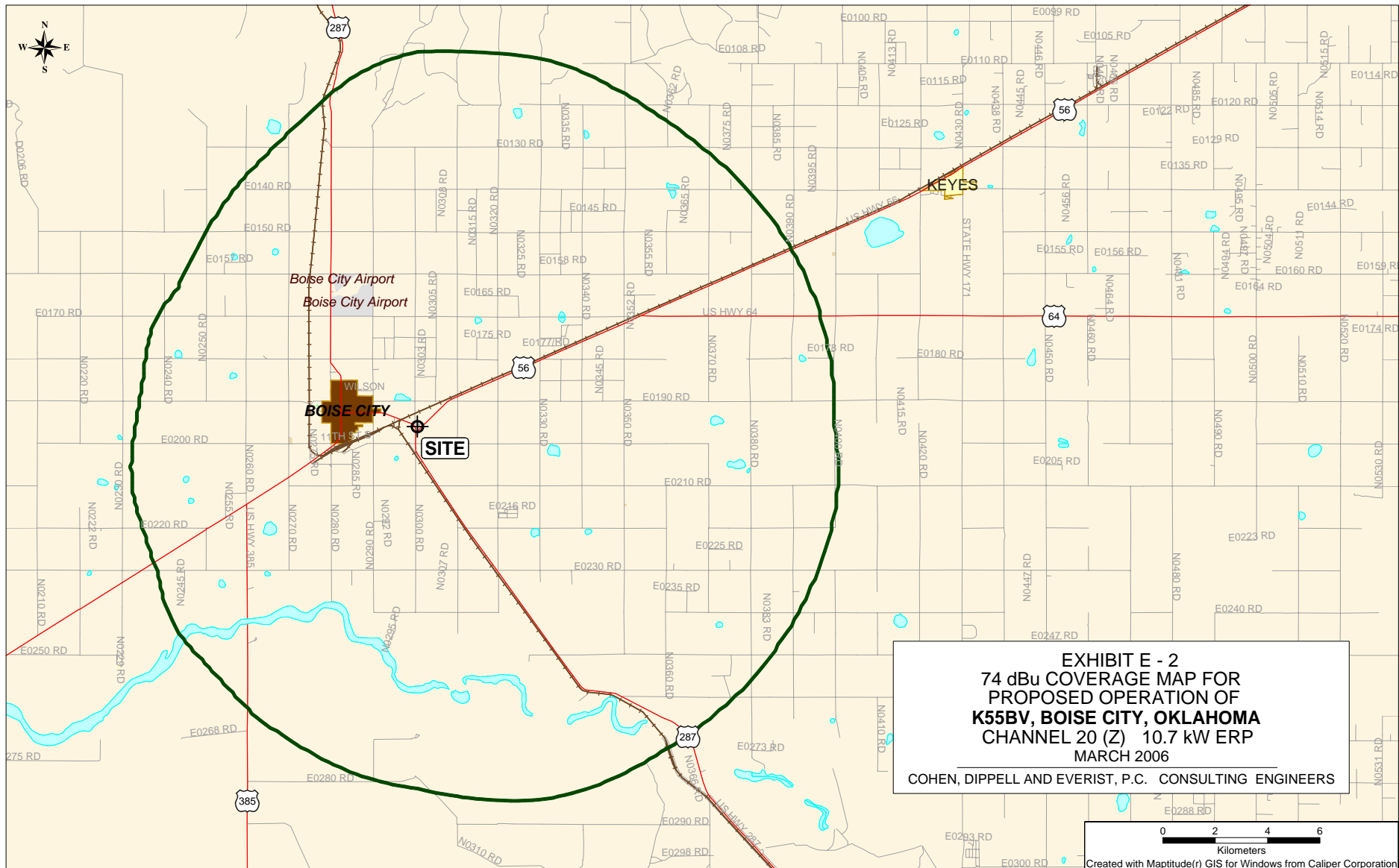
(NOT TO SCALE)

0.0 METERS (0')

(4130') 1258.9 METERS

EXHIBIT E - 1
VERTICAL SKETCH
PROPOSED TRANSLATOR
BOISE CITY, OKLAHOMA
MARCH 2006

COHEN, DIPPELL AND EVERIST, P.C. Consulting Engineers Washington, D.C.



Section III - Engineering (Analog)

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. Frequency Offset:

☐

No offset

☐

Zero offset

☐

Plus offset

☐

Minus offset

3. Translator Input Channel No. _____

4. Primary station proposed to be rebroadcast:

Call Sign	City	State	Channel
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5. Antenna Location Coordinates: (NAD 27)

_____ ° _____ ' _____ " ☐ N ☐ S Latitude

_____ ° _____ ' _____ " ☐ E ☐ W Longitude

6. Antenna Structure Registration Number: _____

☐

Not applicable

See Explanation
in Exhibit No.

☐

FAA Notification Filed with FAA

7. Antenna Location Site Elevation Above Mean Sea Level: _____ meters

8. Overall Tower Height Above Ground Level: _____ meters

9. Height of Radiation Center Above Ground Level: _____ meters

10. Maximum Effective Radiated Power (ERP) Towards Radio Horizon: _____ kW

11. Maximum ERP in any Horizontal and Vertical Angle: _____ kW

12. Transmitting Antenna: ☐ Nondirectional ☐ Directional "Off-the-shelf" ☐ Directional composite

Manufacturer	Model
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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.

CERTIFICATION

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.705, 74.706, 74.707, 74.708, 74.709, 74.710. ☐ 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.

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