Engineering Statement
In Support of an
Application for a New Booster Construction Permit

Main Facility – KBRU(FM), Fort Morgan, Colorado
On-Air Family, LLC

General

The instant application for a booster construction permit seeks to create a new booster facility for the construction permit of KBRU(FM), channel 268C, Fort Morgan, Colorado (BPH-20020813ABJ). This new booster is proposed to be licensed to Commerce City, Colorado, a community that is amply served by the new booster.

Exhibits Explained

The proposed booster (19 kW at 48 meters HAAT) is equivalent to a class C3 facility. With this, Exhibit E, Figure 1 shows that a class C3 at the proposed booster site is fully spaced to all I.F. fulltime and secondary facilities.

Exhibit E, Figure 2 is a terrain contour study showing the ERP, HAAT, and distances to the 70 and 60 dBu contours for the proposed booster facility. The 60 dBu contour is shown in map form (along with the 60 dBu contour of the main facility) in Exhibit E, Figure 3.

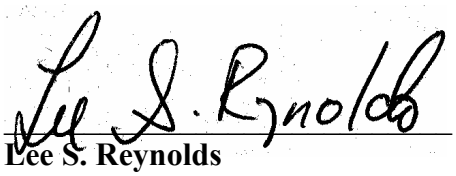
Exhibit E, Figure 4 is a protected and interfering contour map demonstrating that no prohibitive overlap occurs between the proposed facility and other first-adjacent secondary facilities in the immediate area. Exhibit E, Figure 5 is a vertical sketch that labels all pertinent elevations for the proposed facility.

Exhibit E, Figure 6 is a human exposure for the proposed facility. The proposed booster antenna (Jampro JCPD) meets FCC standards for both controlled and uncontrolled radiation.

Conclusion

The proposed booster facility for KBRU(FM) meets all the requirements set forth in Part 74 of the Commission's rules.

For On-Air Family, LLC



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New Booster, Commerce City, CO

Booster I.F. Channel Spacing Study

REFERENCE
39 50 34 N
104 58 39 W

CLASS = C3
Current Spacings
Channel 268 - 101.5 MHz

DISPLAY DATES
DATA 09-13-04
SEARCH 09-13-04

Call	Channel	Location		Dist	Azi	FCC	Margin
K268BC	APP 214D	Littleton	CO	28.03	227.3	8.5	19.53
KGUD	LIC 214A	Longmont	CO	44.60	351.5	12.0	32.60

Exhibit E, Figure 1

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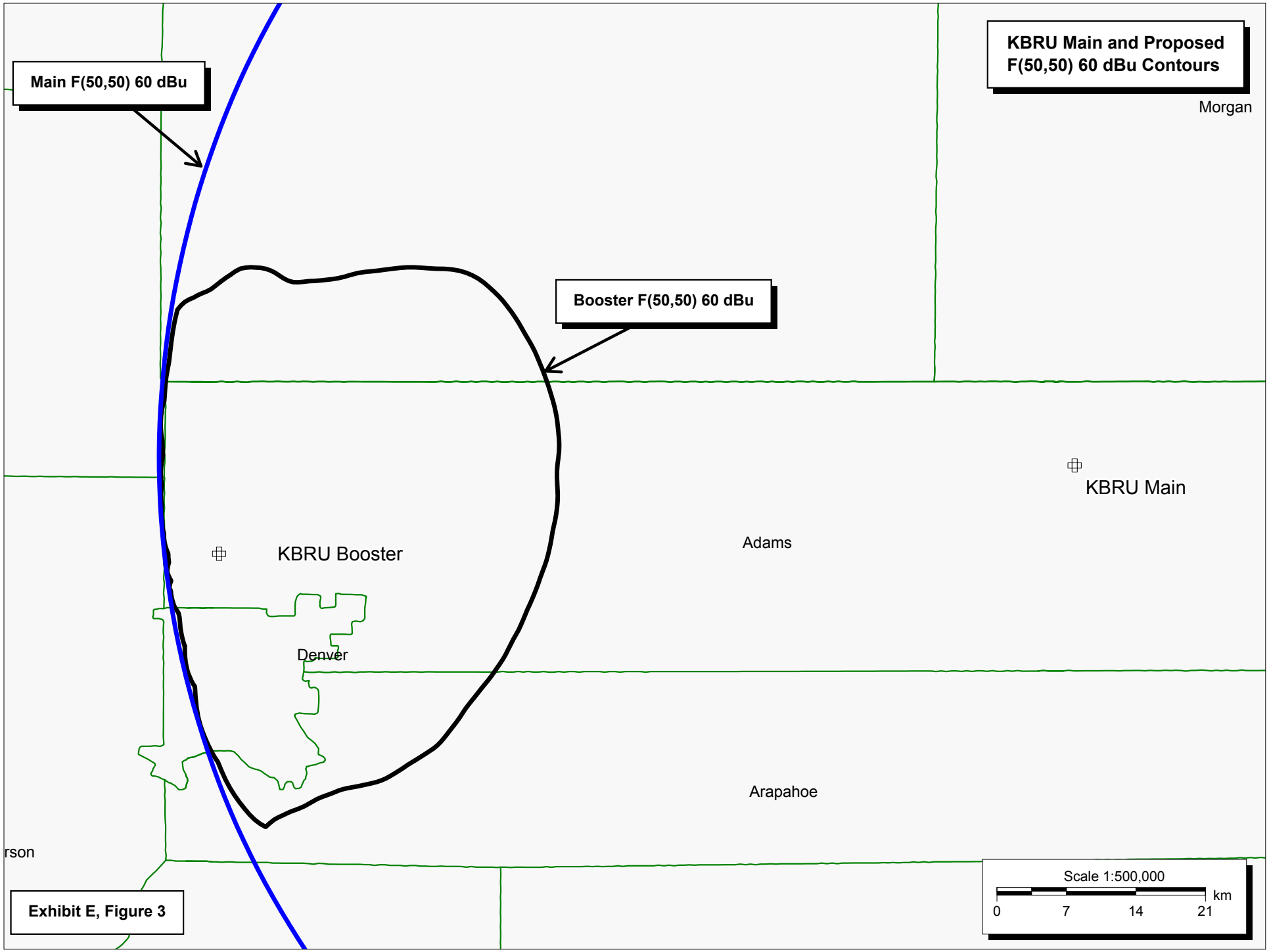
Booster Terrain/Contour Study

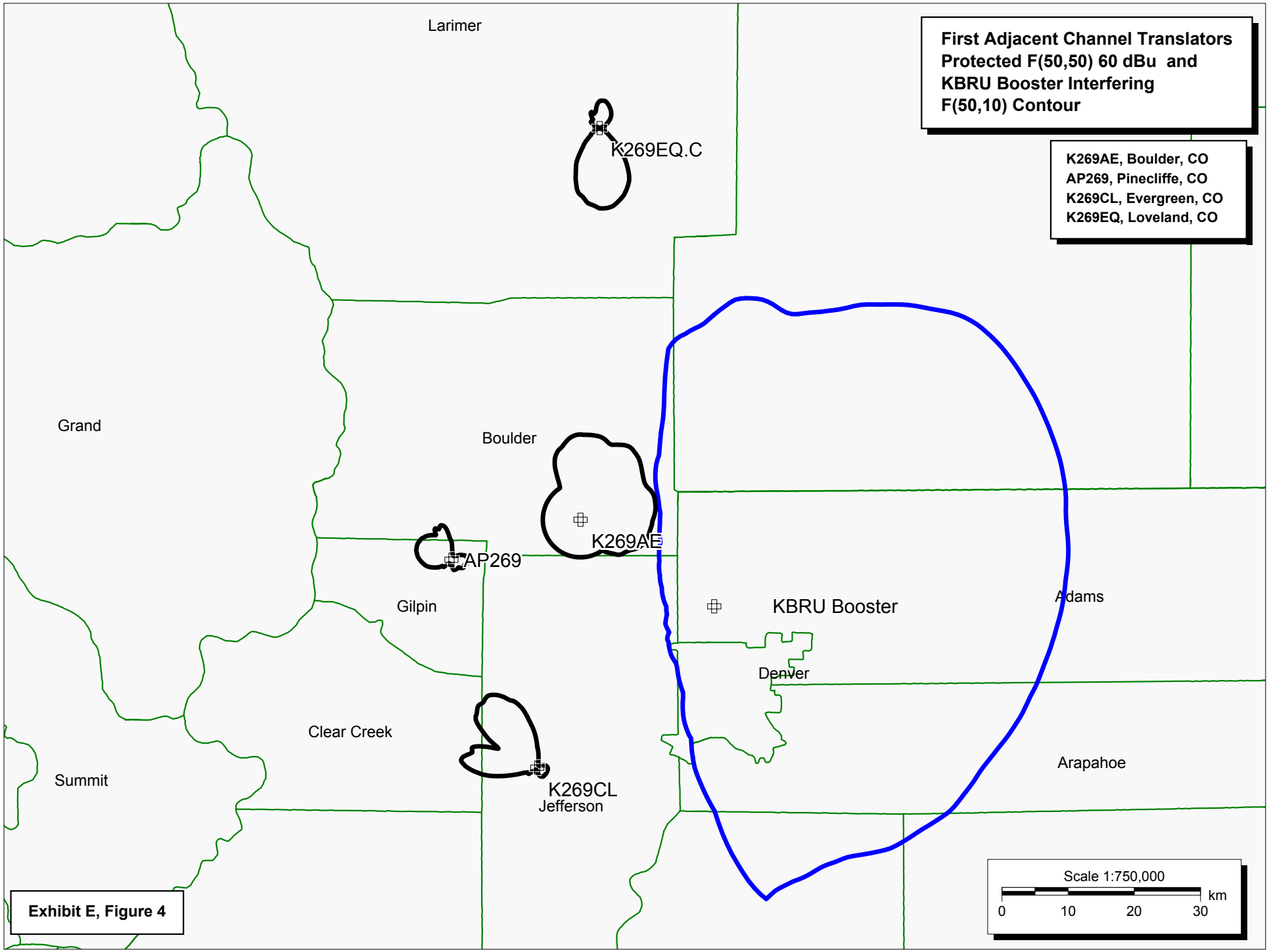
Reference Coordinates:
North Latitude: 39-50-34
West Longitude: 104-58-42

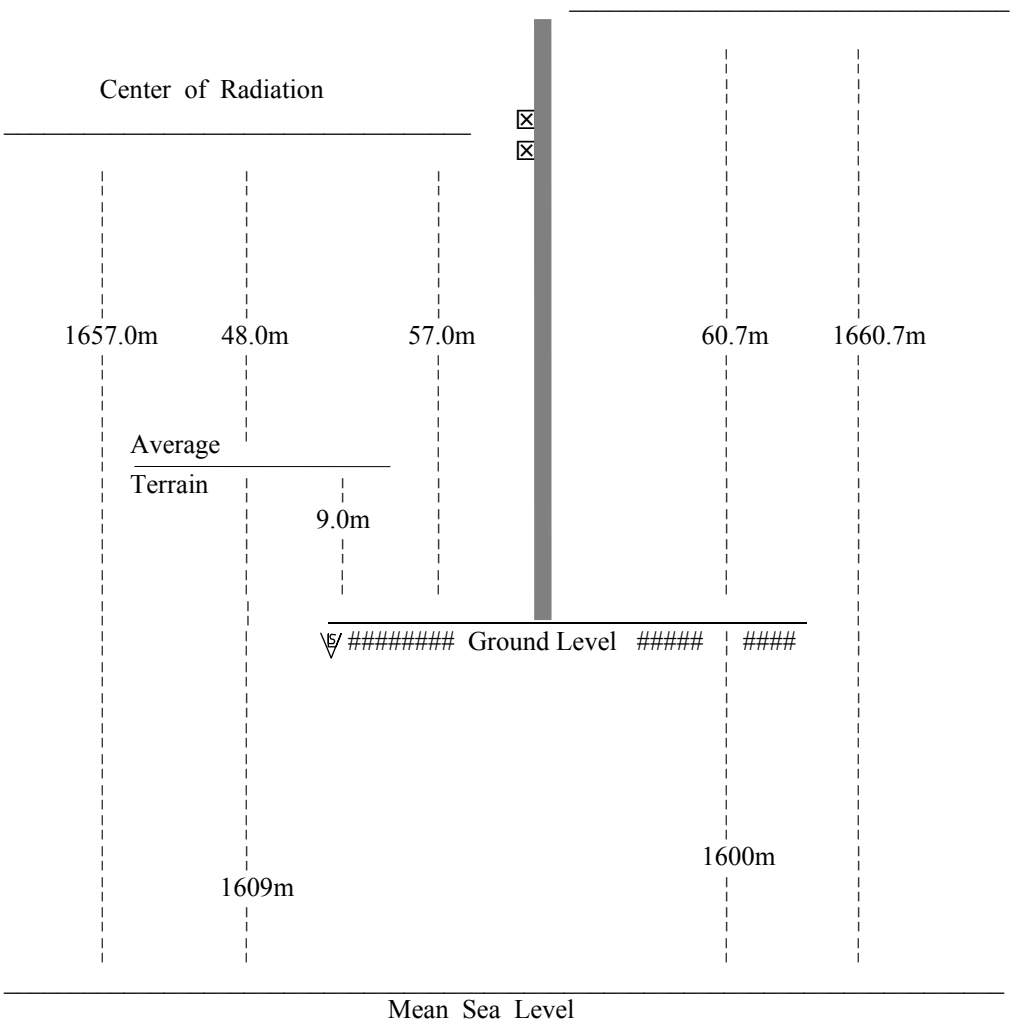
Azimuth °T.	ERP = 19 kW Ave. Elev. 3 to 16 km Meters AMSL	FM - 2-6 Tables Effective Antenna Height Meters AAT	ERP (dBk)	F(50-50) Distance to 70 dBu Contour km	F(50-50) Distance to 60 dBu Contour km
0.0	1604.8	52.2	12.788	15.6	27.4
5.0	1598.0	59.0	12.788	16.7	28.9
10.0	1597.8	59.2	12.788	16.7	29.0
15.0	1600.7	56.3	12.788	16.2	28.3
20.0	1596.0	61.0	12.788	16.9	29.3
25.0	1587.4	69.6	12.788	18.1	31.1
30.0	1577.5	79.5	12.788	19.4	33.1
35.0	1566.4	90.6	12.788	20.7	35.3
40.0	1554.1	102.9	12.788	22.1	37.4
45.0	1548.7	108.3	12.788	22.7	38.2
50.0	1548.7	108.3	12.788	22.7	38.2
55.0	1550.9	106.1	12.788	22.4	37.9
60.0	1553.5	103.5	12.788	22.2	37.5
65.0	1556.6	100.4	12.788	21.8	37.0
70.0	1560.7	96.3	12.788	21.4	36.3
75.0	1566.7	90.3	12.788	20.7	35.2
80.0	1570.1	86.9	12.788	20.3	34.6
85.0	1574.1	82.9	12.788	19.8	33.8
90.0	1577.6	79.4	12.788	19.4	33.1
95.0	1581.6	75.4	12.788	18.9	32.3
100.0	1585.1	71.9	12.788	18.4	31.5
105.0	1587.9	69.1	12.788	18.0	31.0
110.0	1590.2	66.8	12.788	17.7	30.5
115.0	1593.1	63.9	12.788	17.3	29.9
120.0	1595.6	61.4	12.788	17.0	29.4
125.0	1596.2	60.8	12.788	16.9	29.3
130.0	1596.3	60.7	12.788	16.9	29.3
135.0	1598.6	58.4	12.788	16.6	28.8
140.0	1600.5	56.5	12.788	16.3	28.4
145.0	1602.5	54.5	12.788	16.0	27.9
150.0	1606.0	51.0	12.788	15.4	27.1
155.0	1607.7	49.3	12.788	15.1	26.7

Continued on the next page

ERP = 19 kW		FM - 2-6 Tables		F(50-50)	F(50-50)
Azimuth °T.	Ave. Elev. 3 to 16 km Meters AMSL	Effective Antenna Height Meters AAT	ERP (dBk)	Distance to 70 dBu Contour km	Distance to 60 dBu Contour km
160.0	1607.3	49.7	12.788	15.1	26.8
165.0	1606.2	50.8	12.788	15.3	27.0
170.0	1602.6	54.4	12.788	15.9	27.9
175.0	1599.0	58.0	9.600	14.1	25.1
180.0	1596.1	60.9	6.412	11.7	21.0
185.0	1591.5	65.5	2.153	10.1	18.0
190.0	1585.8	71.2	-2.107	7.6	13.6
195.0	1591.2	65.8	-3.691	6.8	12.1
200.0	1604.5	52.5	-5.274	5.5	9.9
205.0	1614.3	42.7	-5.274	5.0	8.9
210.0	1623.2	33.8	-5.274	4.4	7.8
215.0	1627.5	29.5	-5.829	4.0	7.2
220.0	1630.2	26.8	-6.385	3.9	6.9
225.0	1631.8	25.2	-7.256	3.7	6.6
230.0	1630.0	27.0	-8.128	3.5	6.3
235.0	1625.2	31.8	-9.219	3.4	6.1
240.0	1626.9	30.1	-10.311	3.1	5.5
245.0	1633.0	24.0	-10.311	3.1	5.5
250.0	1642.5	14.5	-10.311	3.1	5.5
255.0	1653.9	3.1	-10.980	3.0	5.3
260.0	1664.5	-7.5	-11.649	2.9	5.1
265.0	1672.9	-15.9	-11.649	2.9	5.1
270.0	1674.2	-17.2	-11.649	2.9	5.1
275.0	1673.5	-16.5	-10.980	3.0	5.3
280.0	1672.8	-15.8	-10.311	3.1	5.5
285.0	1674.1	-17.1	-9.731	3.2	5.7
290.0	1670.9	-13.9	-9.151	3.3	5.9
295.0	1663.9	-6.9	-8.182	3.5	6.3
300.0	1662.2	-5.2	-7.212	3.7	6.6
305.0	1655.5	1.5	-6.073	4.0	7.1
310.0	1644.2	12.8	-4.934	4.2	7.6
315.0	1640.9	16.1	-3.520	4.6	8.3
320.0	1637.8	19.2	-2.107	5.0	9.0
325.0	1634.2	22.8	2.583	5.7	10.3
330.0	1631.9	25.1	7.273	6.3	11.4
335.0	1623.7	33.3	10.030	7.9	14.0
340.0	1622.5	34.5	12.788	9.2	16.3
345.0	1622.3	34.7	12.788	11.1	19.9
350.0	1614.2	42.8	12.788	14.0	24.9
355.0	1609.7	47.3	12.788	14.7	26.1


KBRU Main and Proposed
F(50,50) 60 dBu Contours
Main F(50,50) 60 dBu
Booster F(50,50) 60 dBu
Morgan
KBRU Main
KBRU Booster
Adams
Denver
Arapahoe
rson
Scale 1:500,000
km
0
7
14
21
Exhibit E, Figure 3


First Adjacent Channel Translators
Protected F(50,50) 60 dBu and
KBRU Booster Interfering
F(50,10) Contour
K269AE, Boulder, CO
AP269, Pinecliffe, CO
K269CL, Evergreen, CO
K269EQ, Loveland, CO
Larimer
K269EQ.C
Grand
Boulder
K269AE
AP269
Gilpin
KBRU Booster
Adams
Denver
Clear Creek
Arapahoe
Summit
K269CL
Jefferson
Scale 1:750,000
km
0
10
20
30
Exhibit E, Figure 4



Proposed Location - 39° 50' 34" N. Lat. 104° 58' 42" W. Long. (NAD 27)

NOT DRAWN TO SCALE

Proposed antenna - 2 layer panel, directional (Jampro JCPD series).

Exhibit E, Figure 5
Vertical Sketch of
Supporting Structure

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Human Exposure To Radiofrequency Radiation Study

CALL	Service	Channel	Freq.	Polori-zation	Antenna Height** (AGL)	ERP (kW)	Relative Field Factor	Vertical Predicted Power Density ($mWcm^2$)	FCC Uncontrolled Limit (Wcm^2)	Percent of Uncontrolled Limit
NEW	FM	268	101.5	H&V	57	19.000	1.000	0.0146763	0.200	7.3382%

Total Percentage of ANSI (uncontrolled) value = 7.34%

* The antenna height indicated above is 2 meters less than the actual antenna height so that the predicted power density consider the 2 meter human height allowance.

The booster facility proposes to us a Jampro 2-bay panel antenna (JCPD series). The computed elevation pattern for the JCPD series antenna was provided by Jampro and used to compute the highest field between the depression angles of 70 and 90 degrees. With an ERP of 19 kilowatts and a relative field of .0187 (at 70 degrees), the power density was determined to be 14.676 μW/cm². The following pages are the computed elevation pattern for the proposed antenna.

The results of the detailed study is that the power density is 7.34% of the limit for "uncontrolled" environments and 1.47% of the limit for "controlled" environments.

Exhibit E, Figure 6