



## Broadcast Engineering Services of Bonny Doon, Inc.

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Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer

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### **Engineering Statement** in support of an application for a New Non-commercial FM station Cortez, Colorado

#### Background

The Community Radio Project hereby submits an application for a new station to serve the community of Cortez, Colorado.

#### Proposal

The applicant requests authorization to build a new station on a new tower at the following location:

37 13' 10" North  
108 48' 26" West

The tower proposed to be used by the applicant is a new tower. The height of this structure is 12 meters. The applicant proposes to utilize a one-bay circularly polarized directional antenna, side mounted on the existing structure, with .250 kw effective radiated power at a height of 2747 meters above mean sea level on Channel 212 (90.3 MHz). This will provide a 60 dbu contour over the entire community of Cortez, while maintaining contour clearance to surrounding facilities, as outlined in the allocation study and attachments to this engineering statement.

Contour clearances to and from the proposed new facility clear all surrounding existing and proposed stations. The attached contour maps for each facility show the relevant contours and clearances. A directional antenna is proposed to protect surrounding stations.

The proposed new station has no overlap to an existing or proposed analog Channel Six facility. Because of this, the applicant is confident that this application is in compliance with FCC rules regarding Ch. 6 television (FCC Rules 73.525).

Please refer to the FMTV6 map, attached to this engineering statement, for the details of the clearances.

#### RF Statement

The proposed facilities will operate with .250 kilowatts with a Shively 1 bay directional antenna system mounted with a center of radiation 12 meters above ground. This will contribute a calculated level of 35.5 microwatts per squared centimeter at 10 meters from the base of the tower. There are no other broadcast users on this structure. Because the calculated and measured RFR level is less than 20% of the public

standard, this proposal is substantially in compliance with RFR limitations imposed by the FCC rules.

Summary

The applicant is ready to construct this new facility and begin service to the community of Cortez, Colorado. With the grant of this application, the applicant will be able to provide a unique, localized radio service for the residents of the area.

Respectfully submitted,

A handwritten signature in black ink, consisting of a large, stylized initial 'D' followed by several loops and a final flourish.

Consulting Engineer  
October 16, 2007

NEW NCE FM San Juan Basin

REFERENCE CH# 212B - 90.3 MHz, Pwr= 0.25 kW, HAAT= 897.4 M, COR= 2747 M DISPLAY DATES  
 37 13 10.0 N. Average Protected F(50-50)= 40.4 km DATA 10-09-07  
 108 48 26.0 W. SEARCH 10-15-07

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
06+2C Durango	KREZTV	LI _HN CO		86.3 266.8	80.69 BLCT19851107KJ	37 15 46.0 107 53 58.0	6.170 110		45.4 Lin Of Colorado, Llc	194.5R	-113.8M
211C1 Ignacio	KUTE	LIC DVN CO		79.6 260.2	92.30 BLED19980717KA	37 21 51.0 107 46 56.0	3.000 599	67.5 3029	45.0 Kute, Inc.	1.15	10.33
209A Red Mesa	KRMH	LIC _CN AZ		240.8 60.4	58.13 BLED19980309KC	36 57 48.0 109 22 39.0	4.500 41	2.6 1705	27.3 Red Mesa Unified School Di	12.18	29.68
212C0 Grants	KLQK	CP _CX NM		153.2 333.9	243.94 BPED20060824AEC	35 15 08.0 107 35 45.0	18.500 827	181.7 3360	86.0 Educational Media Foundati	32.83	69.02
215C3 Farmington	KSJE	LIC _CN NM		137.9 318.2	77.98 BLED19901108KB	36 41 52.0 108 13 14.0	15.000 119	4.5 1824	43.4 San Juan College	49.74	34.24
209A Farmington	KUUT	CP _VX NM		139.8 320.2	79.57 BMPED20070614AEK	36 40 16.0 108 13 54.0	1.350 202	2.3 1925	32.3 Kute, Inc.	52.86	46.91
213C1 Dulce	KCIE	APP _CX NM		98.6 279.7	165.41 BPED20070907AFA	36 59 00.0 106 58 12.0	10.000 465	95.0 2754	64.6 Jicarilla Apache Tribe	52.31	72.26

Terrain database is NGDC 30 SEC  
 ERP and HAAT are on direct line to and from reference station.  
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

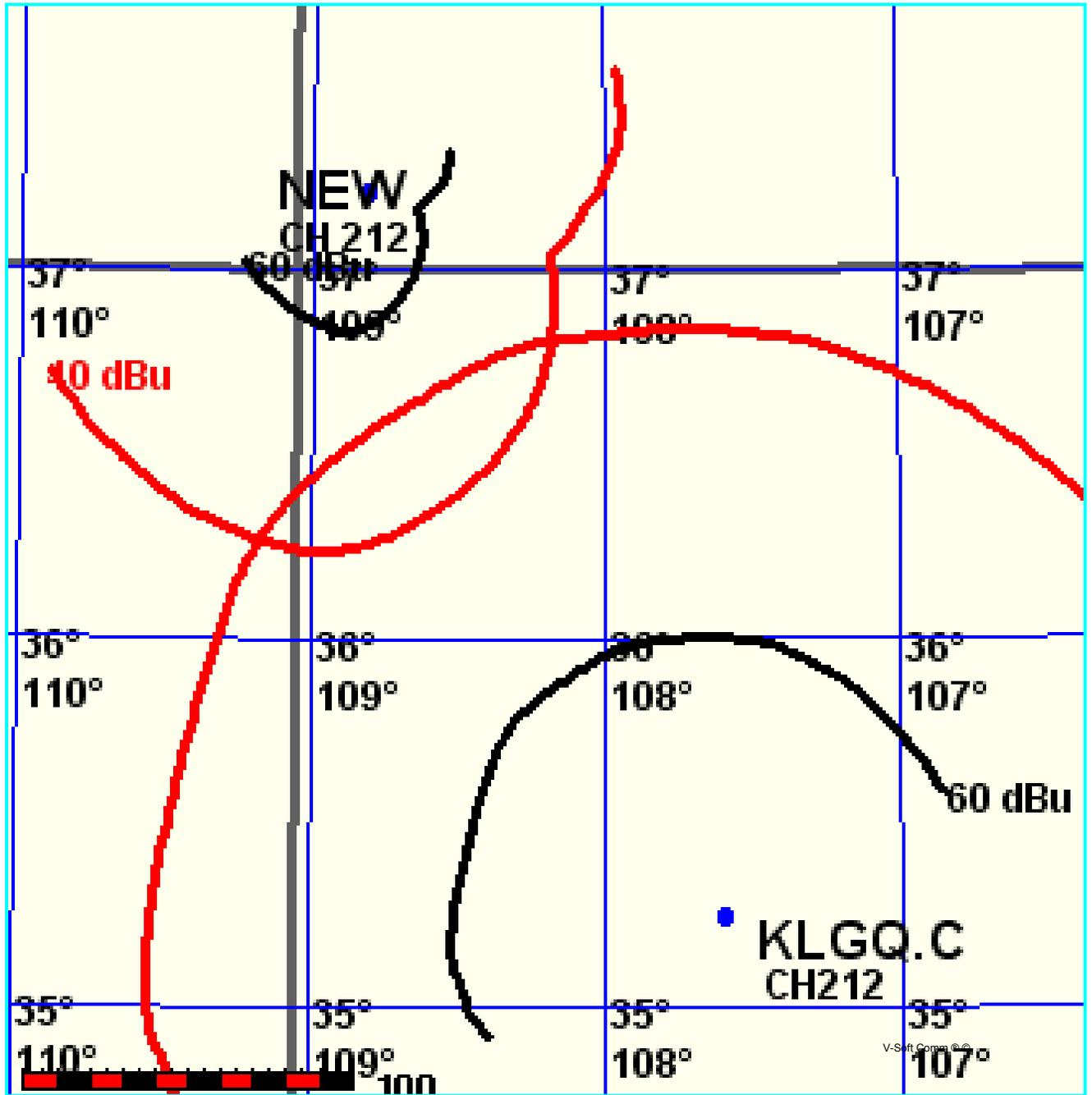
NEW NCE FM San Juan Basin  
NEW-KLGQ

FMCommander Single Allocation Study  
10-15-2007

NEW CH 212 B  
0.25 kW 2747 M COR DA  
Prot. = 60 dBu  
Intef. = 40 dBu

KLGG.C CH 212 C0 BPED20060824AEC  
18.5 kW, 3360 M COR  
Prot. = 60 dBu  
Intef. = 40 dBu

Scale = 1:3,000,000



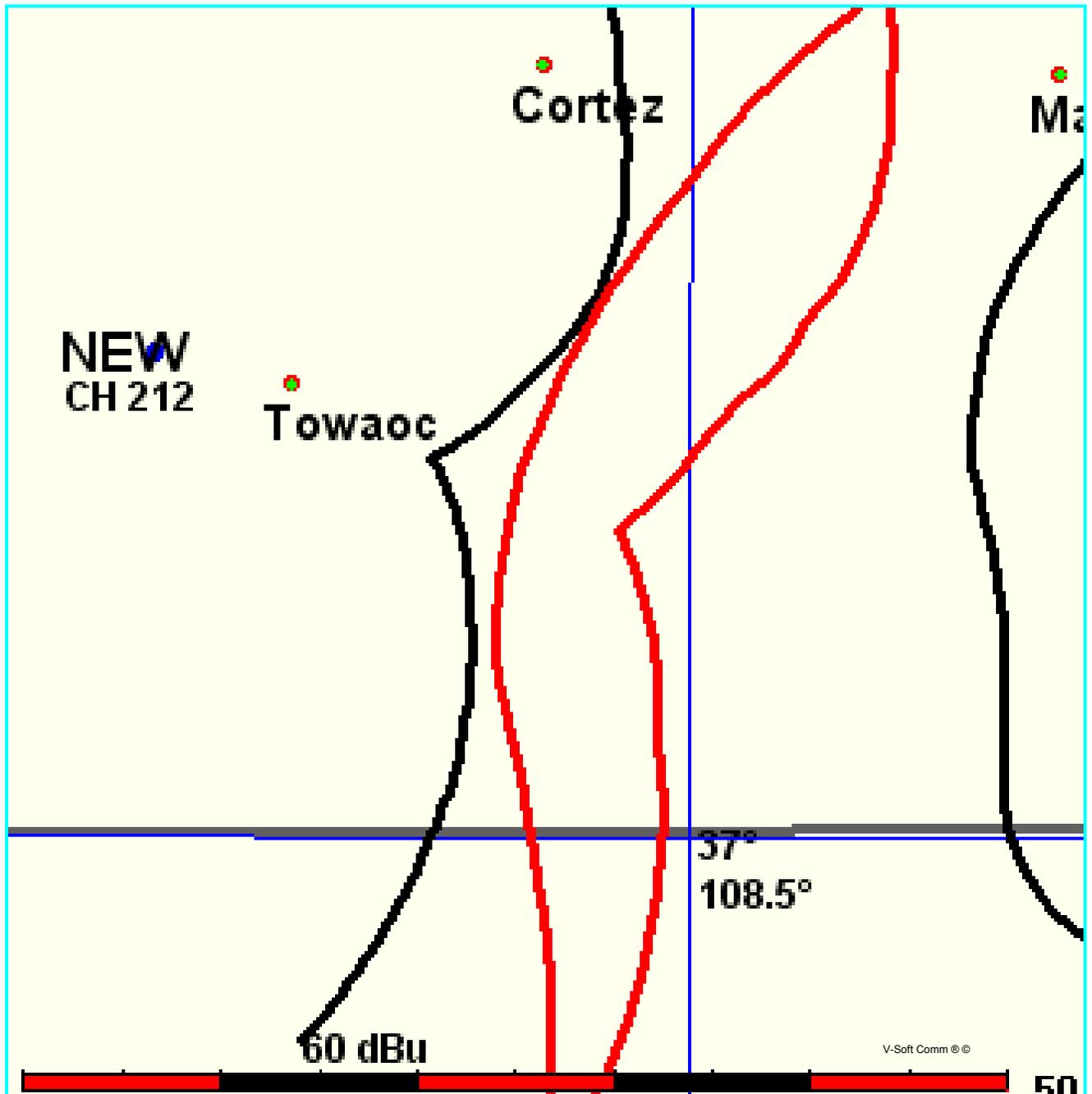
NEW NCE FM San Juan Basin  
NEW-KUTE

FMCommander Single Allocation Study  
10-15-2007

NEW CH 212 B  
0.25 kW 2747 M COR DA  
Prot. = 60 dBu  
Intef. = 54 dBu

KUTE CH 211 C1 BLED19980717KA  
3.0 kW, 3029 M COR DA  
Prot. = 60 dBu  
Intef. = 54 dBu

Scale = 1:500,000



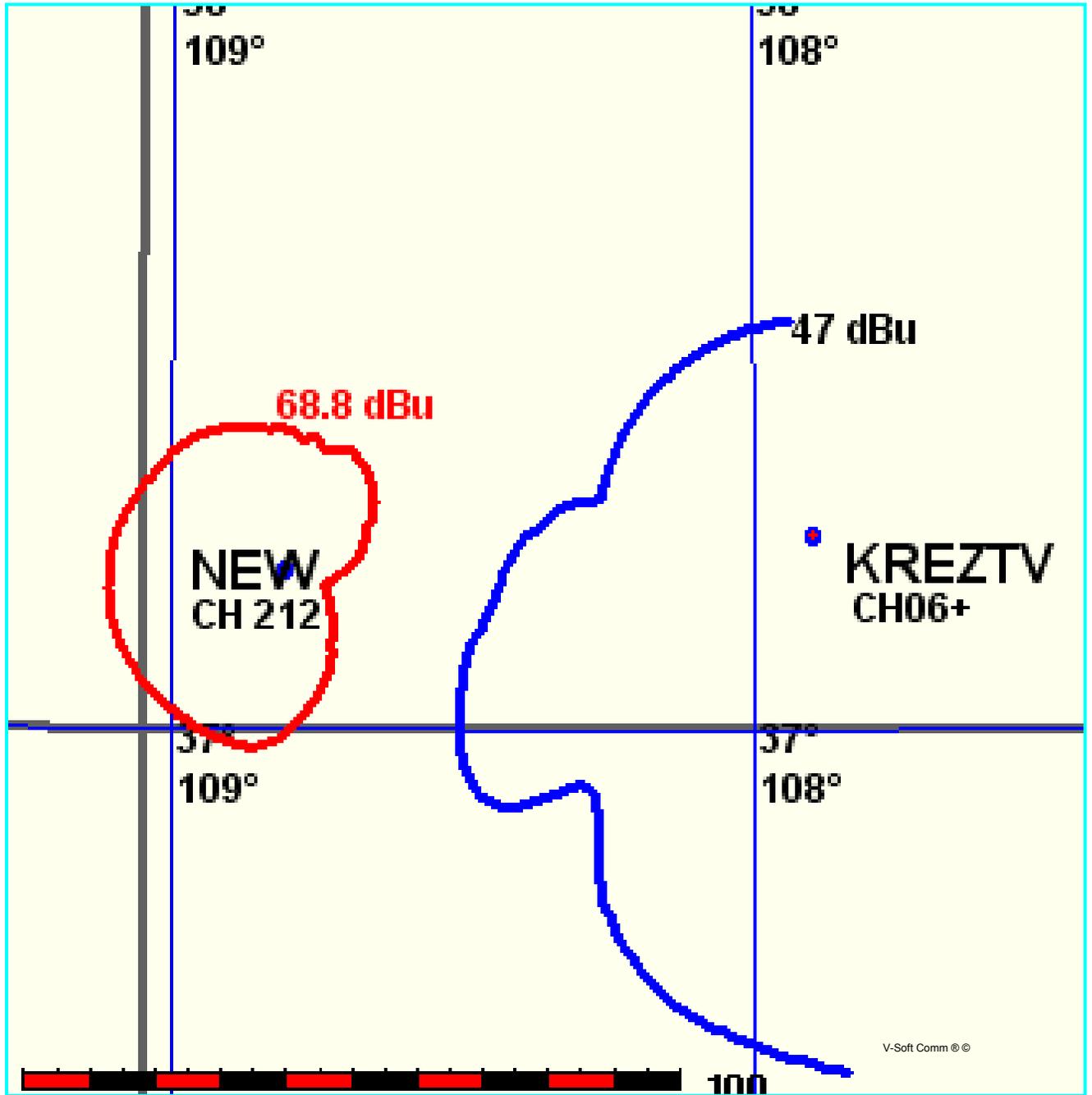
NEW NCE FM San Juan Basin  
NEW-KREZ-TV

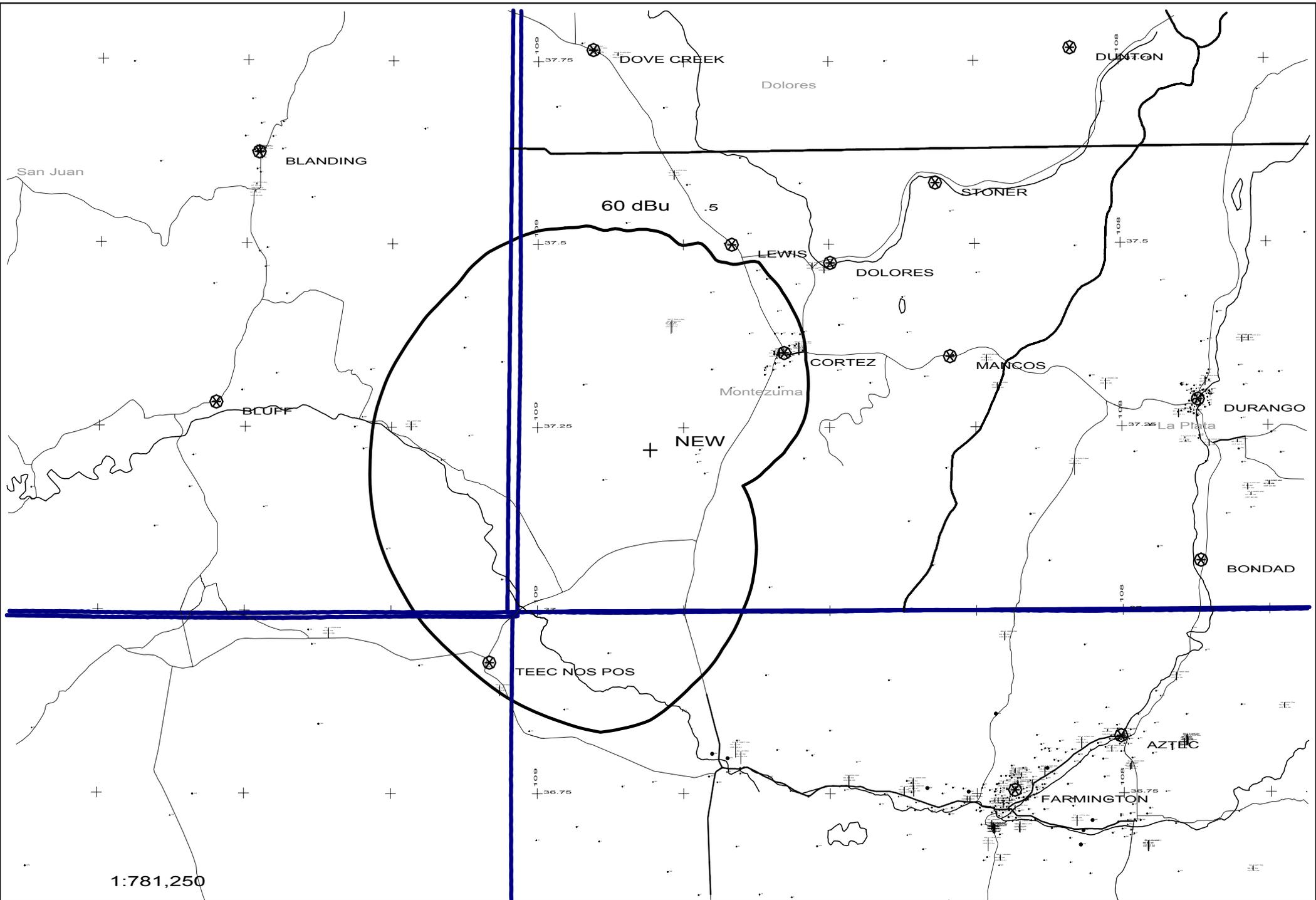
FMCommander Single Allocation Study  
10-15-2007

NEW CH 212 B  
0.25 kW 2747 M COR DA  
Intef. = 68.8 dBu

KREZTV CH 06+ 2C BLCT19851107KJ  
6.17 kW, 2391 M COR  
Prot. = 47 dBu

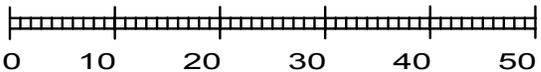
Scale = 1:1,500,000





1:781,250

Scale in km



New San Juan Basin NCE FM

N. Lat. 37 13 10 W. Lng. 108 48 26

NEW\_Ute\_mtn

Don Mussell NCE-CBT - 10

**AFFIDAVIT AND QUALIFICATIONS OF  
DONALD E. MUSSELL JR.**

State of California                    )  
Bonny Doon                            )  
County of Santa Cruz                )

Donald E. Mussell Jr. affirms that he is a consulting radio and electronics engineer; that he is Certified as a Broadcast Engineer, Class 1, by the National Association of Radio and Telecommunications Engineers, Inc., License #E1-00619, issued in 1985;

That he is recognized as a Broadcast Technologist by the Society of Broadcast Engineers, License # 22301, and a member of the Society of Broadcast Engineers since 1980;

That he held a First Class Radiotelephone License from 1975 until 1985, when it was replaced by a lifetime General Class Radiotelephone license (PG-12-20588), issued by the Federal Communications Commission in January of 1985;

That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses, and that his experience in Radio and Television broadcast engineering extends over three decades;

That he declares, under penalty of perjury, that the foregoing engineering exhibits were prepared by him or under his direction and supervision; and that the statements contained therein are true and correct to the best of his belief and knowledge.



Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer  
October 16, 2007