

**EXHIBIT #1**  
**ENGINEERING STATEMENT**

**Regents of the University of New Mexico**  
Minor Change Amendment  
Arroyo Seco, NM  
November 2007

CH 215 A

6 kW H & V DA

This engineering statement supports application filed by Regents of the University of New Mexico to change the transmitter site antenna height and channel, increase ERP and add a directional antenna.

Page #3 of this exhibit is the proposed directional antenna pattern. Page #4 is a graph of the vertical elevation field. Page #5 is a description of how the antenna's directional pattern will be achieved.

**Exhibit # 14** is a 60 dBu coverage map that shows that the proposed facility meets the community coverage requirements of Section 73.515. A tabular listing of the distance to the 60 dBu contour can be found on page #2 of this exhibit.

A total of 8 evenly spaced radials were used to determine the antenna height above average terrain. The USGS 3 arc-second terrain elevation database was employed to determine the elevations along the radials that were averaged using the required four-point interpolation method. The resulting averaged radial antenna heights were employed using the Commission's own TVFMINT algorithm to project the distances to signal contours.

**Exhibit #16** is an Allocation Report showing that there is no prohibited contour overlap with any existing license, construction permit or application.

**Exhibit #19**, there are no pertinent channel-six TV relationships.

**Exhibit #22** is an EPA and R.F. emissions compliance statement, showing that workers and the general public are protected from excess radio frequency emissions. The applicant proposes to undertake the necessary EPA studies at the proposed tower site.

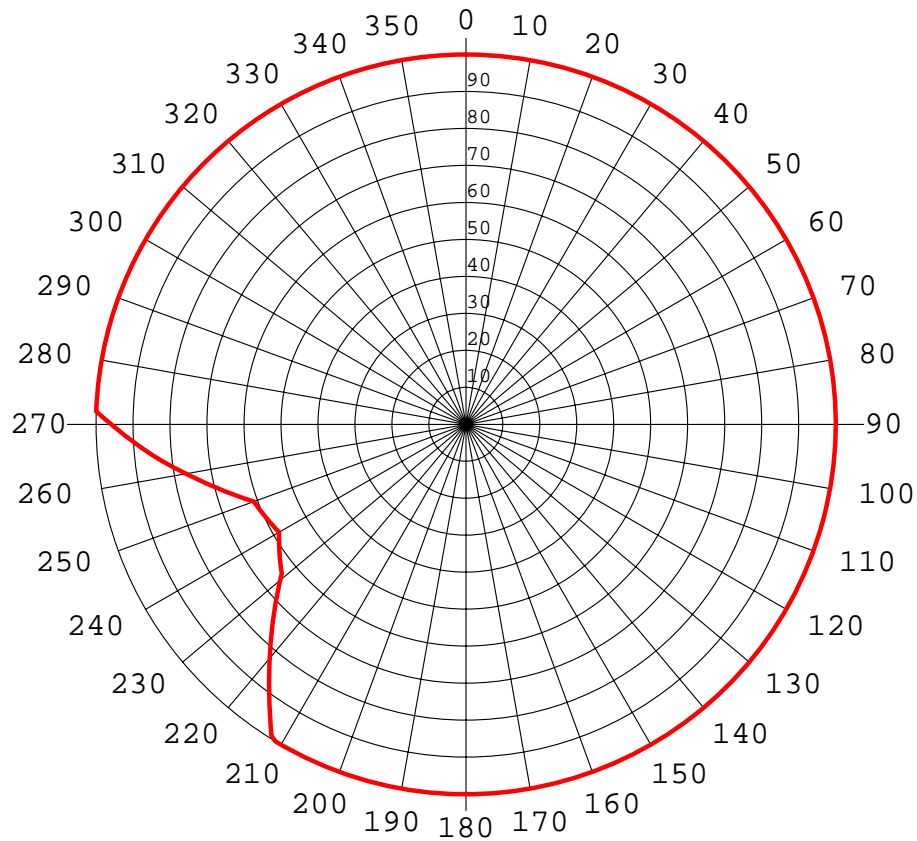
The proposed station is not within 320 km of the U.S. border with Canada and it is not within the specific critical distances to AM broadcast towers, FCC monitoring stations,

Table Mountain and the West Virginia Quiet Zone. The applicant is aware of its responsibility under the rules to correct any blanketing interference that it may cause within the period of one year from commencement of transmissions of newly authorized facilities.

Page #6 of this exhibit is a statement of the qualifications of the preparer.

Doug Vernier

# Composite Azimuth Pattern



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	1.000	7.78	6.0	0.00	180	1.000	7.78	6.0	0.00
10	1.000	7.78	6.0	0.00	190	1.000	7.78	6.0	0.00
20	1.000	7.78	6.0	0.00	200	1.000	7.78	6.0	0.00
30	1.000	7.78	6.0	0.00	210	1.000	7.78	6.0	0.00
40	1.000	7.78	6.0	0.00	220	0.825	6.11	4.1	-1.67
50	1.000	7.78	6.0	0.00	230	0.656	4.11	2.6	-3.67
60	1.000	7.78	6.0	0.00	240	0.583	3.09	2.0	-4.69
70	1.000	7.78	6.0	0.00	250	0.610	3.49	2.2	-4.29
80	1.000	7.78	6.0	0.00	260	0.768	5.49	3.5	-2.29
90	1.000	7.78	6.0	0.00	270	0.958	7.41	5.5	-0.37
100	1.000	7.78	6.0	0.00	280	1.000	7.78	6.0	0.00
110	1.000	7.78	6.0	0.00	290	1.000	7.78	6.0	0.00
120	1.000	7.78	6.0	0.00	300	1.000	7.78	6.0	0.00
130	1.000	7.78	6.0	0.00	310	1.000	7.78	6.0	0.00
140	1.000	7.78	6.0	0.00	320	1.000	7.78	6.0	0.00
150	1.000	7.78	6.0	0.00	330	1.000	7.78	6.0	0.00
160	1.000	7.78	6.0	0.00	340	1.000	7.78	6.0	0.00
170	1.000	7.78	6.0	0.00	350	1.000	7.78	6.0	0.00

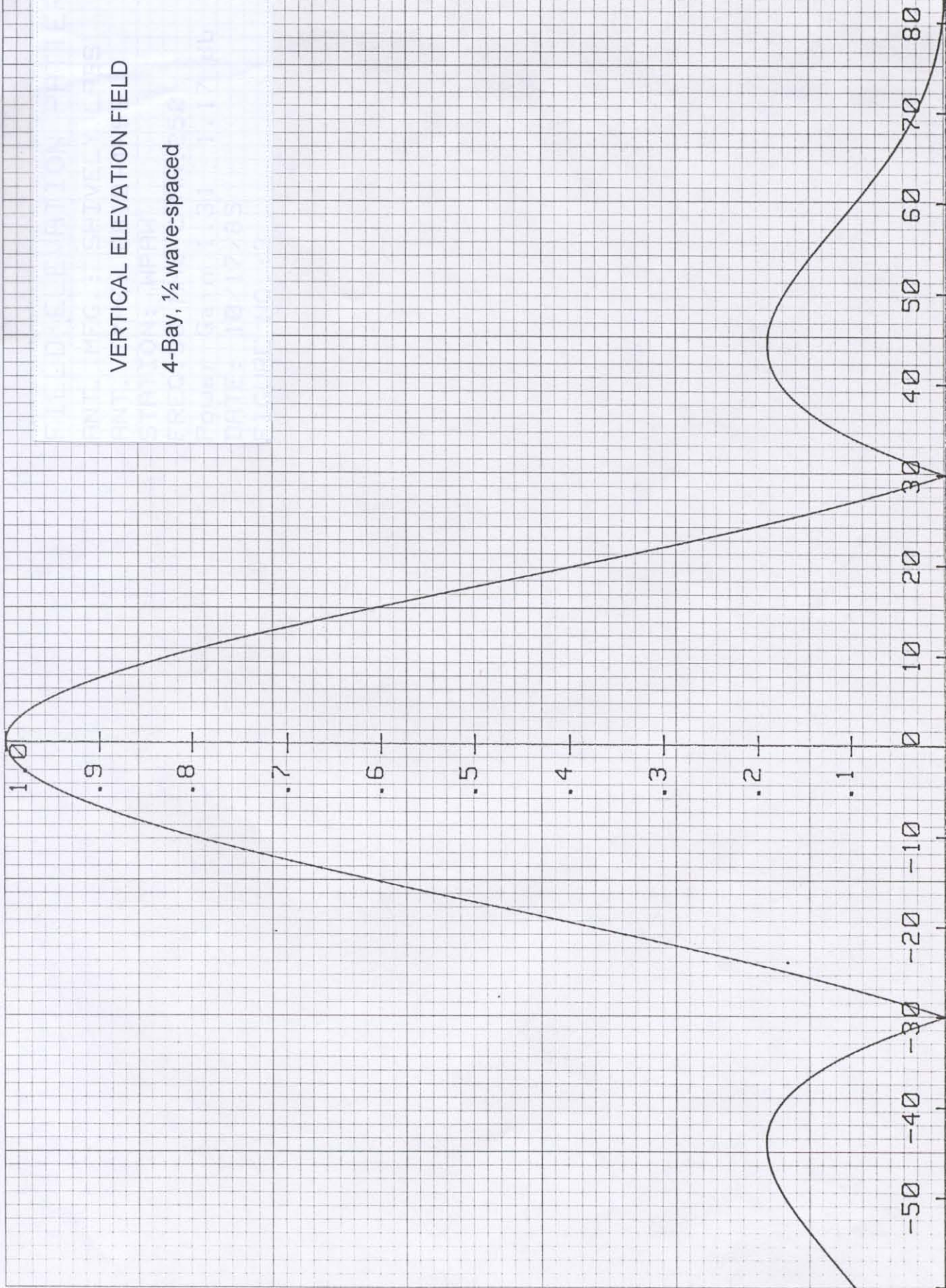
## Extra Points

211	1.000	7.78	6.0	0.00	272	1.000	7.78	6.0	0.00
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Rotation Angle = 0

VERTICAL ELEVATION FIELD

4-Bay, 1/2 wave-spaced



## **Directional Antenna**

The proposed custom directional antenna pattern meets the Commission's rules in that the radio frequency emission does not change more than two dB for each ten degrees of azimuthal variation. Also, the maximum pattern attenuation in the deepest null is less than 15 dB. The pattern shown is a composite of the maximum field values in the horizontal and vertical planes.

The proposed antenna will be mounted on the sides of a post that has been specified by the antenna manufacturer in accordance with the instructions provided by the manufacturer. The antenna will not be mounted on the top of a tower that includes a top mounted platform larger than the nominal cross-sectional area of the tower in the horizontal plane. No other antennas of any type will be mounted at the same tower level as the directional antenna nor within the horizontal or vertical distance specified by the manufacturer as being necessary to maintain proper directional operation. The antenna will be designed and tested by a major manufacturer of broadcast antennas known to the Commission. The pattern will be achieved through traditional methods including power-splitting, resonators and phasing.

**Declaration:**

I, Douglas L. Vernier, declare that I have received training as an engineer from the University of Michigan School of Engineering. That, I have received degrees from the University in the field of Broadcast Telecommunications. That, I have been active in broadcast consulting for over 30 years;

That, I have held a Federal Communications Commission First Class Radiotelephone License continually since 1964. In 1985, this license was reissued by the Commission as a lifetime General Radiotelephone license no. PG-16-16464;


That, I am certified as a Professional Broadcast Engineer (#50258) by the Society of Broadcast Engineers, Indianapolis, Indiana. (Re-certified 1/2006.)

That, my qualifications are a matter of record with the Federal Communications Commission;

That, I have been retained by the University of New Mexico to prepare the engineering showings appended hereto:

That, I have prepared these broadcast engineering showings, the technical information contained in same and the facts stated within are true of my knowledge;

That, under penalty of perjury, I declare that the foregoing is correct.

A handwritten signature in blue ink, reading "Doug Vernier". The signature is stylized with a large, looping "D" and a long, horizontal stroke at the end.

Douglas L. Vernier

Executed on November 15, 2007