

**Exhibit 13-D**  
**Section 74.1204**  
**KXXM Contour Protection**

K285CN Ft. Smith, AR  
Contour map showing K285CN  
proposed operation on Channel 288D  
243 watts @ 165 m HAAT  
(non-directional antenna)  
Interfering contour with KXXM (cp)  
Channel 286A Muldrow, OK  
does not reach the ground.

**Proposed K288CN F(50,10)**  
**105.9 dBu contour**

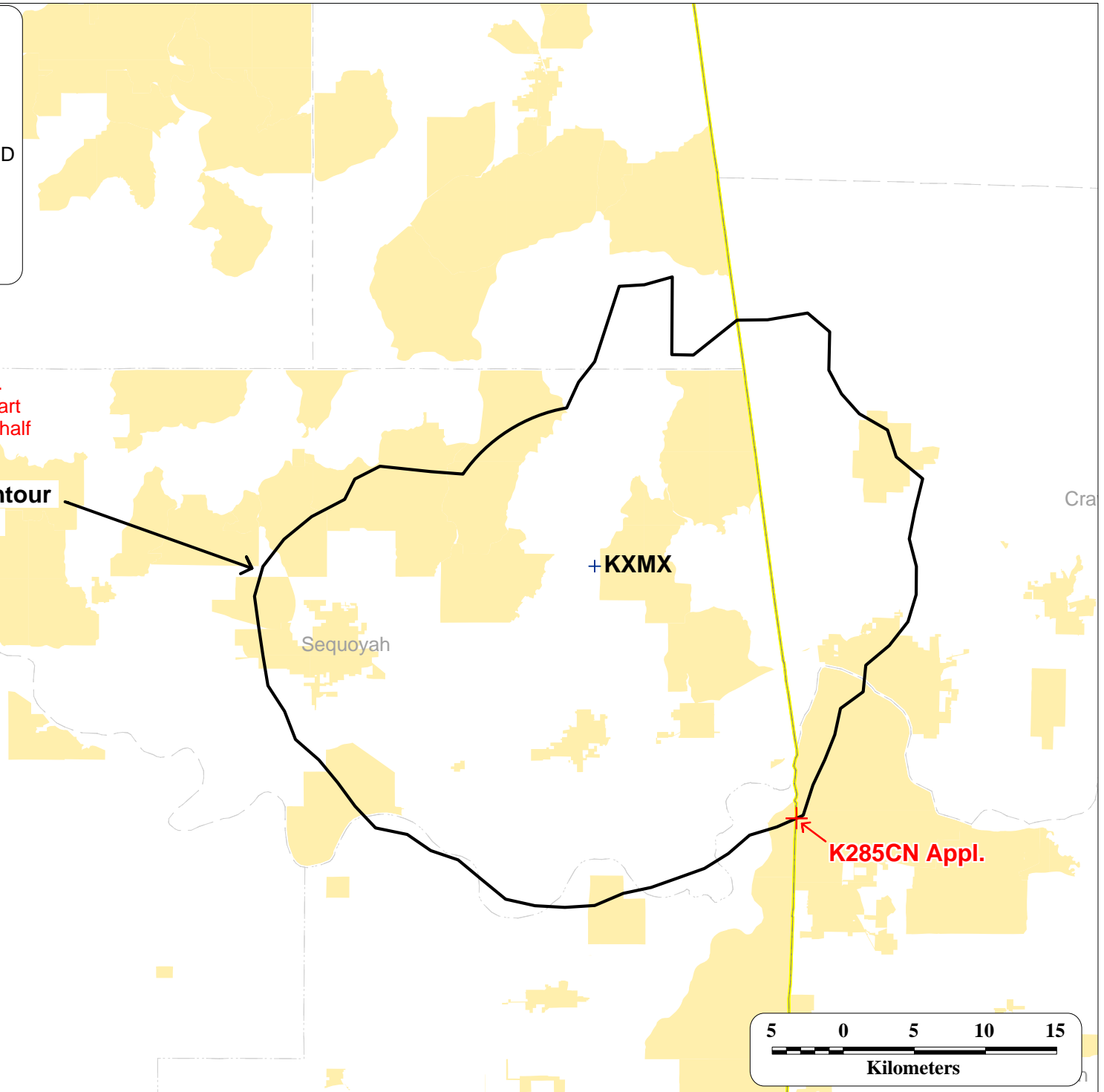
Contour does not reach the ground.  
See attached spreadsheet and chart  
for Shively Labs Model 6832 6 bay half  
wave elevation pattern tabulation.

**KXXM F(50,50) 65.9 dBu contour**  
**(contour intersects K285CN**  
**proposed transmit site)**

K285CN Proposed  
35-21-15.5 N ~ 94-25-53.3 W  
ERP: 0.243 kW HAAT: 165 m  
Frequency: 105.5 MHz  
Channel 288D  
RC-AMSL: 312.5 m  
Horizontal Pattern: Omni

KXXM  
BNPH20110630AAL  
35-30-49.1 N ~ 94-35-18.1 W  
ERP: 6 kW HAAT: 100 m  
Frequency: 105.1 MHz  
Channel 286C1  
RC-AMSL: 322 m  
Horizontal Pattern: Omni

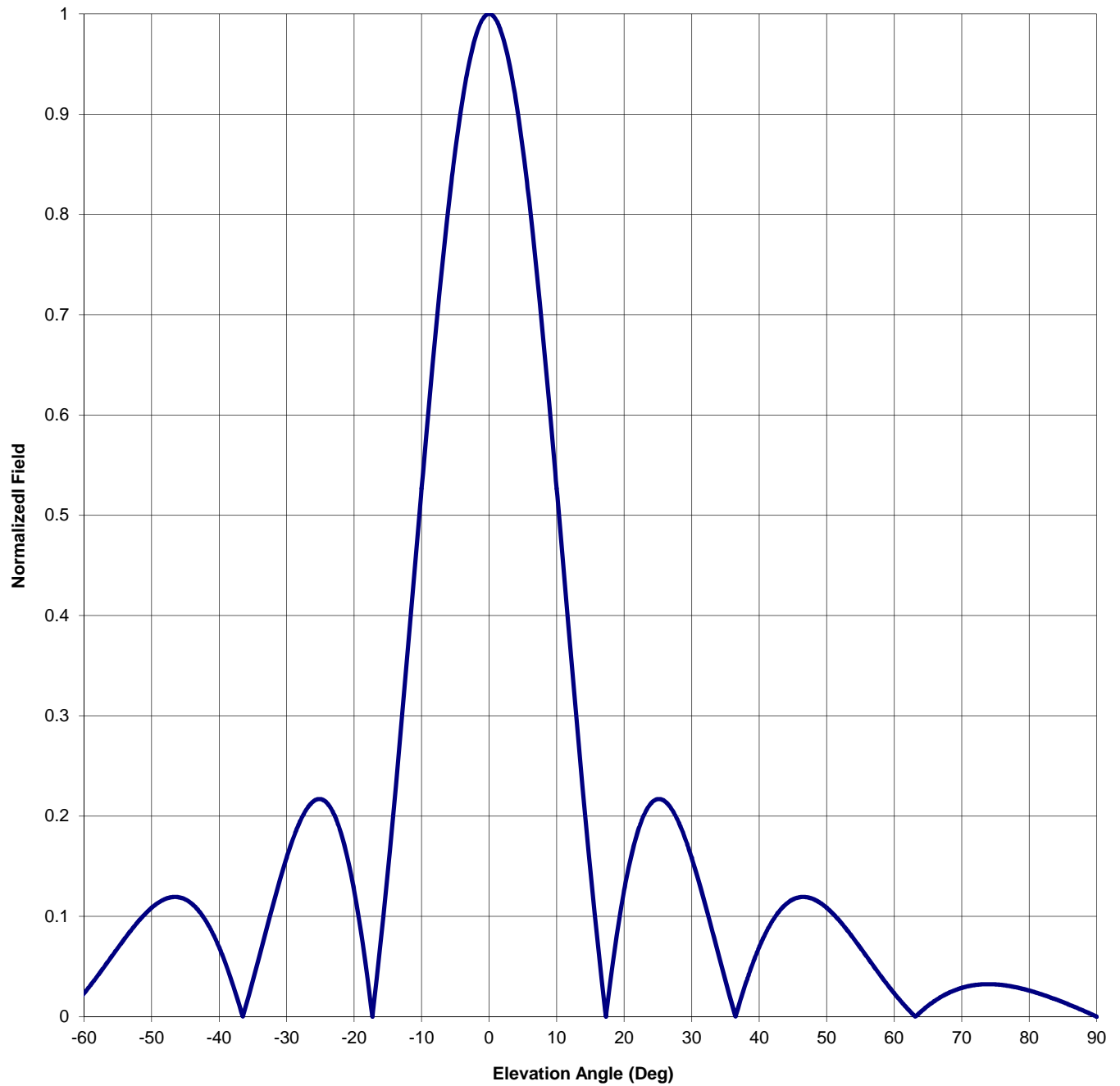
**HORIZON**  
BROADCAST SOLUTIONS



Antenna Mfg.: Shively Labs  
Antenna Type: 6832-6-SS(0.5)-BB  
Station: K285CN  
Frequency: 105.5  
Channel #: 288  
Figure: 57338

Date: 4/10/2012

Beam Tilt	0	
Gain (Max)	2.126	3.276 dB
Gain (Horizon)	2.126	3.276 dB



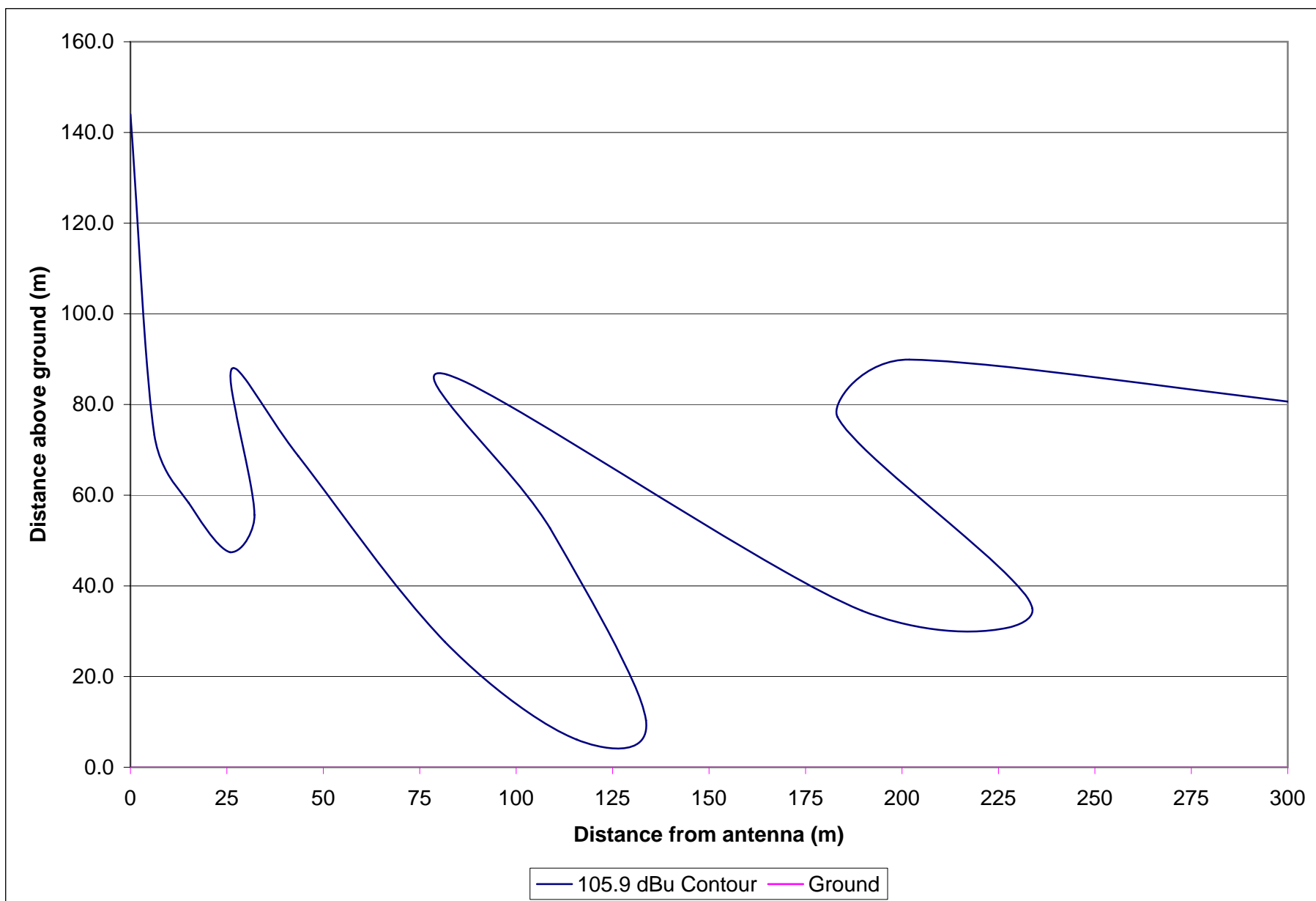
**Antenna Mfg.: Shively Labs**  
**Antenna Type: 6832-6-SS(0.5)-BB**  
**Station: K285CN**  
**Frequency: 105.5**  
**Channel #: 288**  
**Figure: 57338**

**Date: 4/10/2012**

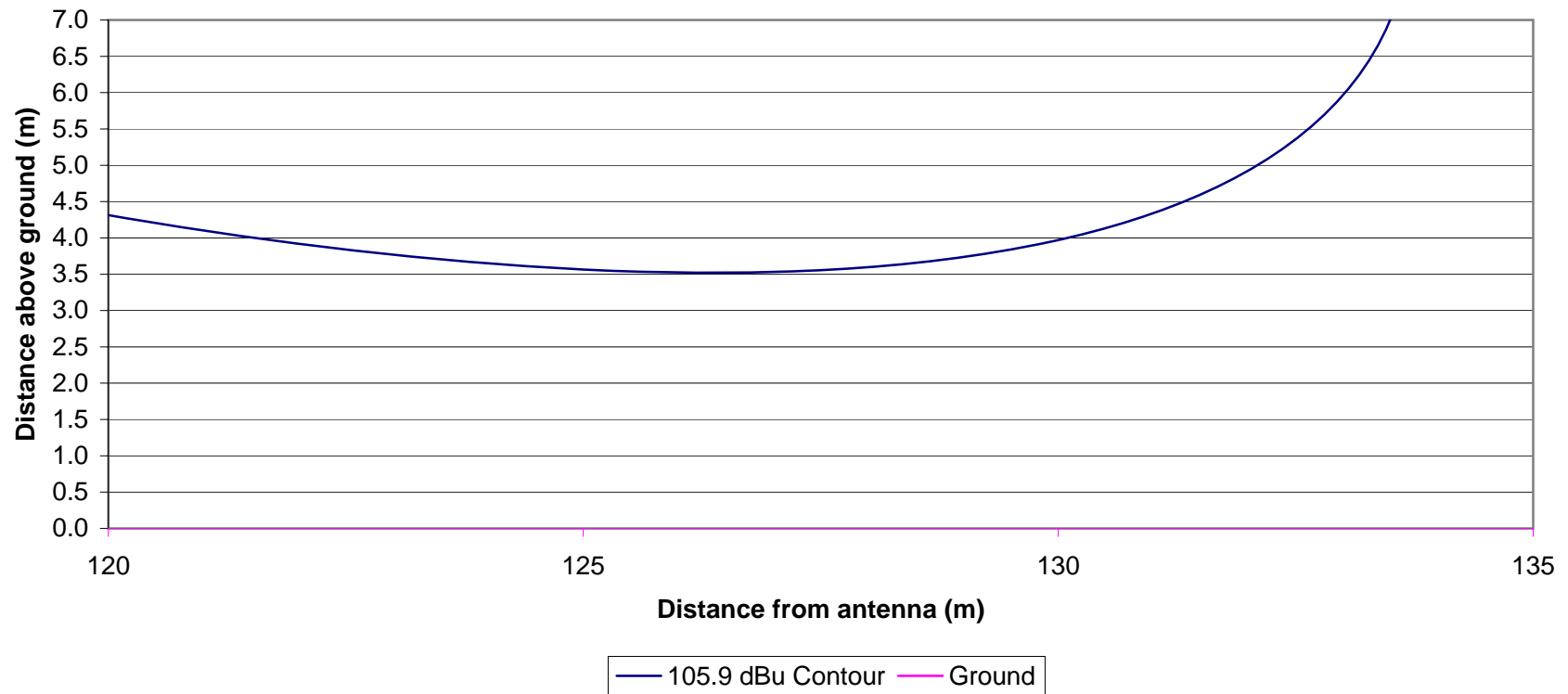
**Beam Tilt 0**  
**Gain (Max) 2.126 3.276 dB**  
**Gain (Horizon) 2.126 3.276 dB**

Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field	Angle of Depression (Deg)	Relative Field
-90	0.000	-44	0.112	0	1.000	46	0.119
-89	0.003	-43	0.105	1	0.994	47	0.119
-88	0.006	-42	0.096	2	0.978	48	0.117
-87	0.009	-41	0.084	3	0.950	49	0.114
-86	0.012	-40	0.069	4	0.912	50	0.109
-85	0.015	-39	0.052	5	0.865	51	0.102
-84	0.017	-38	0.033	6	0.809	52	0.095
-83	0.020	-37	0.011	7	0.746	53	0.087
-82	0.022	-36	0.012	8	0.677	54	0.078
-81	0.024	-35	0.036	9	0.604	55	0.069
-80	0.026	-34	0.061	10	0.527	56	0.059
-79	0.028	-33	0.087	11	0.448	57	0.050
-78	0.029	-32	0.112	12	0.370	58	0.041
-77	0.031	-31	0.136	13	0.292	59	0.032
-76	0.032	-30	0.159	14	0.217	60	0.023
-75	0.032	-29	0.178	15	0.145	61	0.015
-74	0.033	-28	0.195	16	0.078	62	0.008
-73	0.032	-27	0.207	17	0.017	63	0.001
-72	0.032	-26	0.215	18	0.038	64	0.005
-71	0.030	-25	0.217	19	0.085	65	0.011
-70	0.029	-24	0.213	20	0.126	66	0.016
-69	0.026	-23	0.202	21	0.159	67	0.020
-68	0.024	-22	0.184	22	0.184	68	0.024
-67	0.020	-21	0.159	23	0.202	69	0.026
-66	0.016	-20	0.126	24	0.213	70	0.029
-65	0.011	-19	0.085	25	0.217	71	0.030
-64	0.005	-18	0.038	26	0.215	72	0.032
-63	0.001	-17	0.017	27	0.207	73	0.032
-62	0.008	-16	0.078	28	0.195	74	0.033
-61	0.015	-15	0.145	29	0.178	75	0.032
-60	0.023	-14	0.217	30	0.159	76	0.032
-59	0.032	-13	0.292	31	0.136	77	0.031
-58	0.041	-12	0.370	32	0.112	78	0.029
-57	0.050	-11	0.448	33	0.087	79	0.028
-56	0.059	-10	0.527	34	0.061	80	0.026
-55	0.069	-9	0.604	35	0.036	81	0.024
-54	0.078	-8	0.677	36	0.012	82	0.022
-53	0.087	-7	0.746	37	0.011	83	0.020
-52	0.095	-6	0.809	38	0.033	84	0.017
-51	0.102	-5	0.865	39	0.052	85	0.015
-50	0.109	-4	0.912	40	0.069	86	0.012
-49	0.114	-3	0.950	41	0.084	87	0.009
-48	0.117	-2	0.978	42	0.096	88	0.006
-47	0.119	-1	0.994	43	0.105	89	0.003
-46	0.119	0	1.000	44	0.112	90	0.000
-45	0.117			45	0.117		

Elevation (Degrees)	Relative Field	ERP (dBk)	Contour* (Meters)
0	1	-6.144	555
5	0.865	-6.778	515
10	0.527	-8.997	399
15	0.145	-14.56	209
20	0.126	-15.229	195
25	0.217	-12.84	258
30	0.159	-14.203	219
35	0.036	-20.97	100
40	0.069	-17.959	142
45	0.117	-15.529	189
50	0.109	15.851	180
55	0.069	-17.959	142
60	0.023	-22.219	87
65	0.011	-25.229	62
70	0.029	-21.55	94
75	0.032	-20.97	100
80	0.026	-22,219	87
85	0.015	-23.98	71
90	0	0	0



Closeup of interfering contour at closest point to ground



**Study to Demonstrate Compliance with  
Section 74.1204 with respect to  
KXXM (construction permit)  
Channel 286A Muldrow, OK  
Prepared by Fred H. Baker, Jr., Applicant  
April 30, 2012**

In order to fully demonstrate that the proposed translators' predicted interfering contour does not reach the ground or habitable spaces, a basic site survey and study was performed by the Applicant, a former land surveyor.

The study concludes that the predicted interfering contours will not reach the ground or into any habitable spaces.

Specifically, the study found that (1) the ground level in any area of concern is not above the base of the tower, and (2) all buildings in the area of concern are single story only, and (3) the proposed facility's predicted interfering contour will remain above ground and any habitable space.

**Methodology:** To make this determination, the "worst case" area where the interfering contours come closest to (but does not actually reach) the ground was determined by the applicant's technical advisor, Donald Lynch, of Horizon Broadcast Services.

As demonstrated by the data in the Application, this area was determined to be between 112 and 134 meters from the tower base. Using FCC dictated computations, this is where the 50 degree lobe could be as close as 3.5 meters above ground, (or actually, above the base of the tower).

As all buildings in the area are single story only, this in and of itself should be sufficient to show compliance. However, because its "close", we have undertaken this additional site survey to fully demonstrate total compliance.

The 112 and 134 meter distances were plotted on a Google Earth image, which is attached to this exhibit and labeled as "Image One". The area of concern is only 22 meters wide (less than 75 feet wide). This is the area shown between the yellow lines of the semi-circle in Image One, made a part of this Exhibit.

The accuracy of the plotted lines on the image were verified through an on site survey by a two person survey crew using a 100 foot chain. The 112 meters and 134 meters were converted to feet (367 and 439 feet), On-site measurements were taken and compared to the Google image shown attached as "Image One". These on-site measurements closely confirmed the accuracy of the measurements shown on the image.

A calibrated hand level was used to confirm topographical database information. The tower base is fairly close to the edge of a cliff. The terrain falls off dramatically to the east where there is a cliff. (This is why the yellow lines form a semi-circle rather than a circle, as there is a drop off in excess of seventy feet towards the east.) To the west the terrain falls off gradually from the cliff and tower base.

The ground level in the area of concern (between the semi-circles) was found to be either equal to or lower than the base of the tower. Only near the cliff where there are no structures was the ground level equal to the base of the tower. The ground level at all buildings within the semi-circle was lower than the base of the tower. All buildings within the area of concern (between the semi-circles) have been confirmed to be one story only.

There are five building within, or partially within, the semi-circles, or the area of greatest concern, where the predicted interfering contour reaches closest to the ground, but does not actually reach the ground. Pictures of all these buildings are attached to this Exhibit as images 2 through 6. These plainly show that each is single story only. The images run counter-clockwise in the semi-circle of Image One, or from top to bottom in the image. Image Two shows the first building, at about 10:30 o'clock from the base of the tower. It is single story only and is used as a maintenance building for the Arkoma, Oklahoma public schools. The rest of the buildings are residential and single story only. The building at about 9:00 o'clock from the tower base is shown in Image 3, and etc. Three of these buildings are occupied. The building furthest to the south is vacant. All buildings are one story and their respective ground levels are below the base of the tower.

The majority of this information can be easily double-checked by the Commission using Google Earth and the Street Level View in Google Earth. Google Earth Street Level View plainly shows all buildings in the area to be single story. AMSL (in feet) in Google Earth is shown at the bottom of the main image, and the readings are mouse location dependent.

**Conclusions:** Using Commission dictated formulas and readily verifiable data, this study plainly shows the proposed facility's predicted interfering contour would not reach the ground or enter habitable spaces.

At the interfering contour's closest approach to the ground vertically, in an unused and fenced area near the cliff, it remains over 3.3 meters (about 11 feet) above the level of the base of the tower.

The buildings in the study are all single story, and the ground elevation at those buildings is below the elevation of the tower base.



This study clearly demonstrates that the proposed facility's interfering contour does not reach the ground or into any habitable space.

(Images One through Six, and a Synopsis, Follow)

Image One



The area within the semi-circle (between the yellow lines) is the area where the proposed translators' interfering contour could come closest to the ground. This is the fifty degree lobe, which falls between 112 and 134 meters from the tower base, a width of less than 75 feet. At worst case, assuming a ground level equal to the tower base, the interfering contour could reach within 3.5 meters of the ground. The ground level in all areas where the predicted interfering contour comes closest to the ground is never higher than the base of the tower. This study demonstrates the actual lower terrain in the vicinity of buildings in the area, and single-story building heights, result in the proposed facility's predicted interfering contour not reaching the ground or any habitable area. .

Image Two



This is an image of the first building in the “area of concern” (where the interfering contour would come closest to, but not reach the ground). It is located between the yellow lines of Image One, at about 10:30 o’clock from the base of the tower, which is near the center of the picture. This building is used as a maintenance building for the nearby Arkoma Public Schools. It is **single story** only. Its ground floor is below the base of the tower. (Note that the elongated objects showing in Image One to the southwest of this building are not buildings, but parked school busses.)



Image Three



This image is of the building between the yellow lines of Image One to the west of the tower base, or at 9:00 o'clock from the tower base. It is an occupied residence, is **single story** only, and its ground floor is well below the base of the tower.

Image Four



This is the building to the southwest of the tower base between the yellow lines (or in the “area of concern”) shown in Image One. It is a residence, and **single story** only. The ground level is below the base of the tower.

Image Five



There are two buildings to the south-southwest of the tower (or about 7:00 o'clock from the tower base) that are both partially between the yellow lines of Image One. They are to the east (to the right) of Stateline Road, which runs from top to bottom in Image One. This puts both of them in the area of concern, where the interfering contour would reach closest to, but not reach, the ground. This is the building to the north, (or the one closer to the top of Image One). It is a **single story** only residence, and the ground level is lower than the base of the tower.

Image Six



This is the building furthest towards the bottom of Image One within the yellow semi-circles, (or the “area of concern”, where the interfering contour reaches closest to, but does not reach, the ground). It is directly adjacent to the building in Image Five. This building is unoccupied, is a residence, and is **single story** only. The ground level here is below the base of the tower.



## SYNOPSIS:

(1) Using Commission dictated formulas, the closest the proposed facility's predicted interfering contour comes to the ground (predicated by a ground level consistently flat and even with the tower base) is 3.5 meters AGL (about 11.5 feet AGL).

(2) The ground level in all areas where the predicted interfering contour comes closest to the ground is never higher than the base of the tower, and almost always lower.

(3) All buildings in the area where the predicted interfering contour comes closest to the ground have ground elevations below the base of the tower.

(4) All buildings in the area where the predicted interfering contour comes closest to the ground are pictured in this exhibit, and have been confirmed to be single story only.

(5) Further, it also appears all buildings within a much wider area, about one half-mile of the tower base, are all single story only.

By Commission dictated formulas, and also by an actual on-site survey, it can be fully demonstrated that the proposed facility's predicted interfering contour will not reach the ground or any habitable space.

Therefore, the proposed facility fully meets the requirements of the Rules.