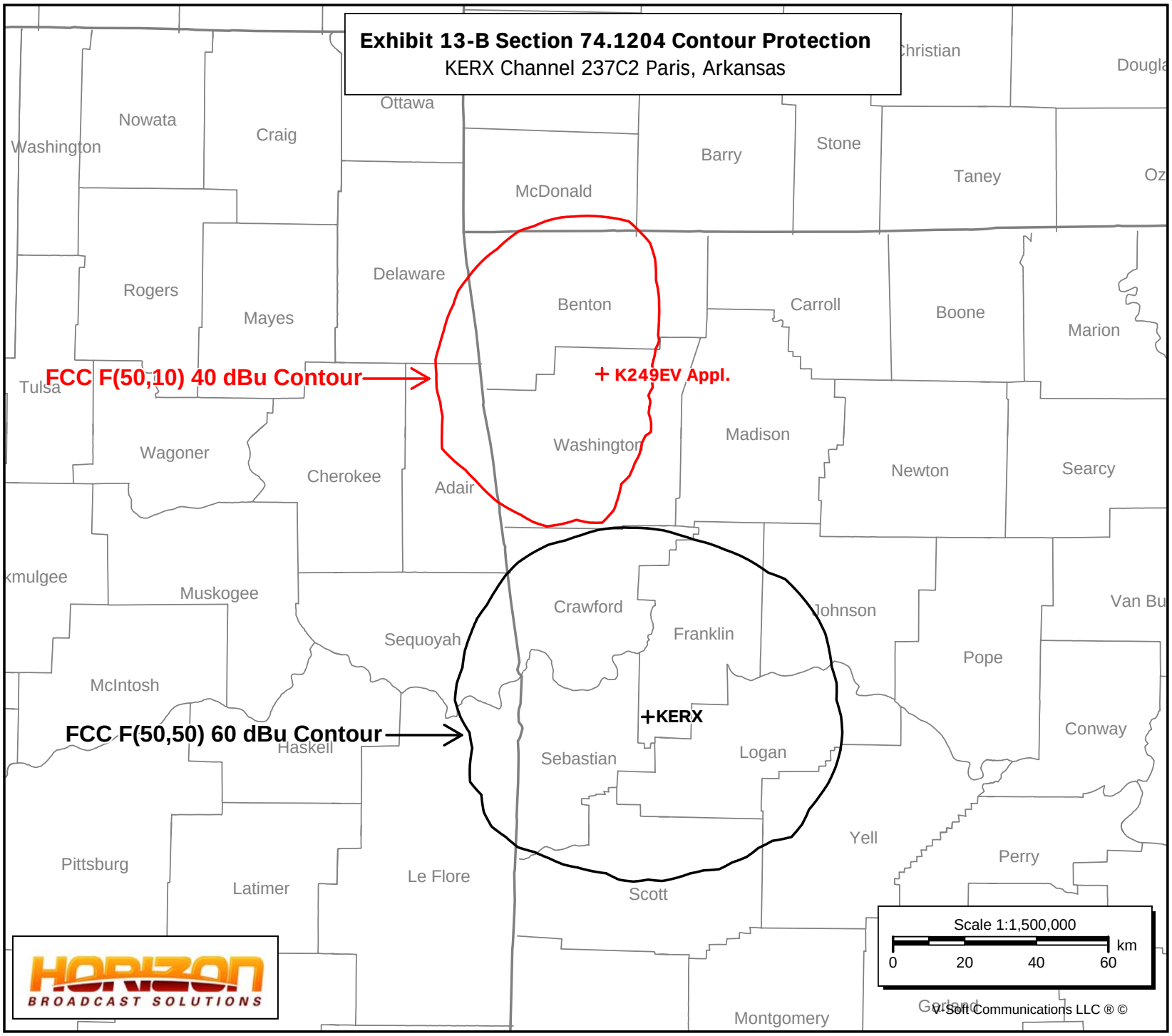
K249EV Appl.
Johnson, AR
Latitude: 36-08-50 N
Longitude: 094-11-13 W
ERP: 0.095 kW
HAAT: 172.67 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 557.9 m
Elevation: 413.9 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

KERX
Paris, AR
BLH20020418AAQ
Latitude: 35-17-13 N
Longitude: 094-02-51 W
ERP: 50.00 kW
HAAT: 140.0 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 308.0 m
Elevation: 162.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC



K249EV Appl.
Johnson, AR
Latitude: 36-08-50 N
Longitude: 094-11-13 W
ERP: 0.095 kW
HAAT: 172.67 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 557.9 m
Elevation: 413.9 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

K237FT
Eureka Springs, AR
BLFT20150226AAY
Latitude: 36-21-38 N
Longitude: 093-44-54 W
ERP: 0.092 kW
HAAT: 0.0 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 525.0 m
Elevation: 500.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

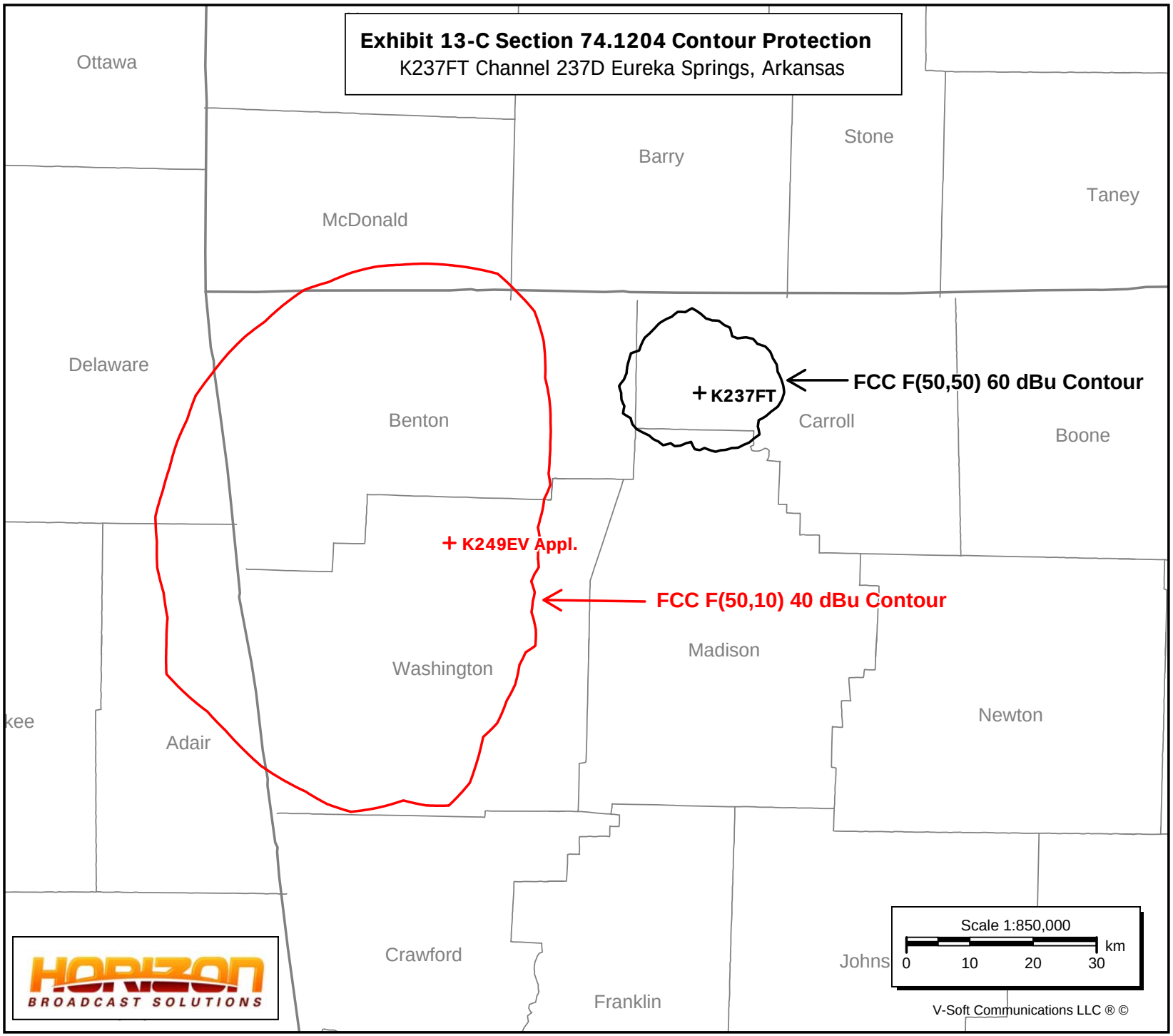


Exhibit 13-D
Section 74.1204
Contour Protection to KRMW

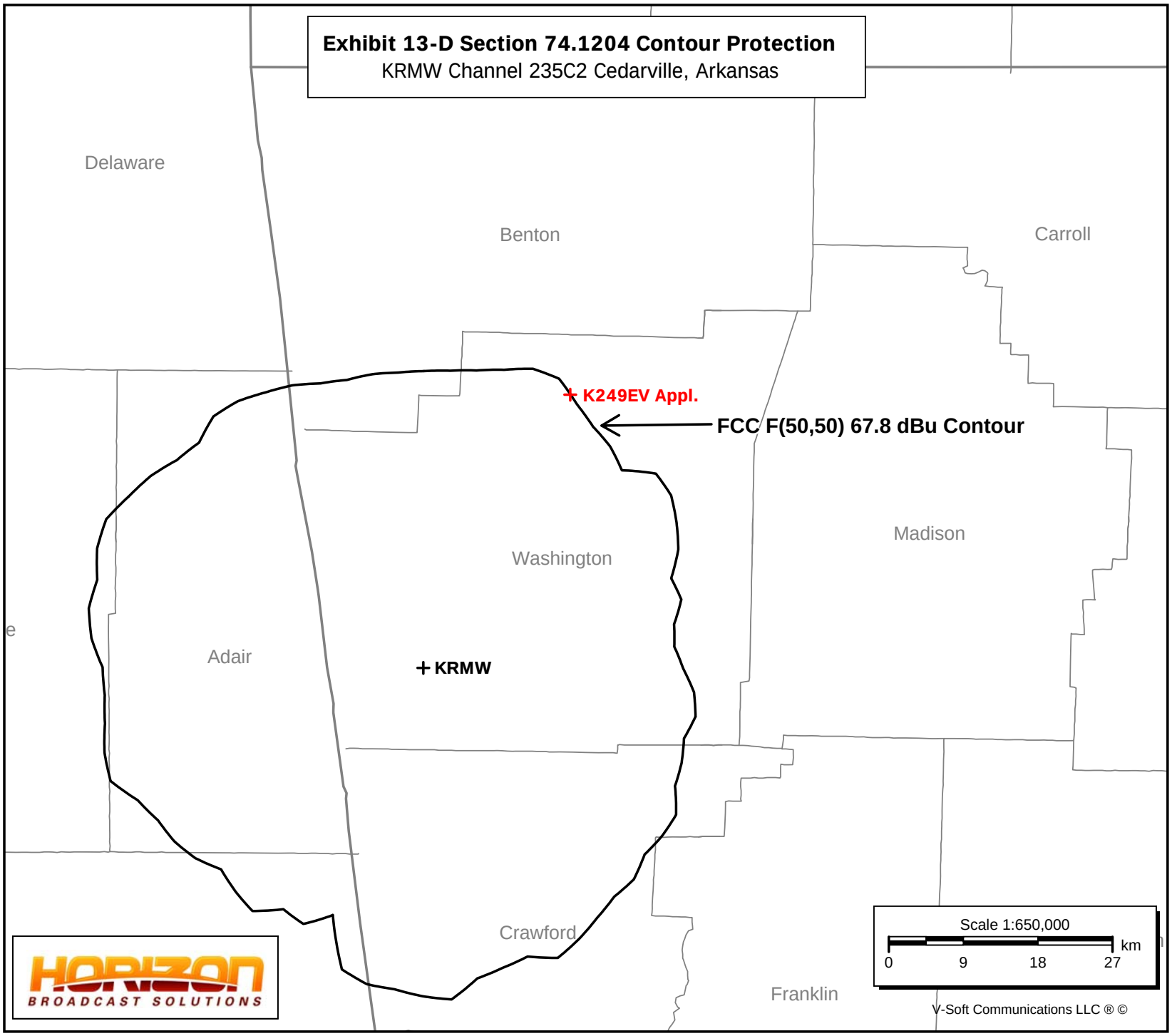
This comprehensive exhibit has been prepared to demonstrate that the K249EV modification will not cause prohibited interference to KRMW, Channel 235C2, Cedarville, AR. The KRMW F(50,50) protected contour at the K249EV application site is 67.8 dBu. Therefore the K249EV F(50,10) interfering contour with respect to KRMW is the 107.8 dBu contour. Using the FCC's FM propagation curves program (see attached), the 107.8 dBu contour was calculated to extend 279 meters from the antenna.

The proposed K249EV transmit antenna will be located 144 meters above ground level. As shown on the accompanying spreadsheet and chart, using the vertical elevation pattern data for the PSI Model FML one bay antenna, the ERP and contour distances have been calculated every 10 degrees from 0 degrees to 90 degrees. The contour distance decreases from a maximum distance of 279 meters at 0 degrees to 0 meters at 90 degrees. That data was calculated in the attached charts to plot the distance the interfering contour extends into free space. The contour does not reach the ground. The contour comes to within approximately 4.8 meters (15.7 feet) of ground level at approximately 140 meters (459.2 ft.) from the tower base. The tower is located at the highest elevation in the immediate area and there are no multistory buildings in the vicinity of the tower. The attached Google Earth Screenshot shows there is one occupied building within approx. 400 meters of the tower base. Therefore is believed that

the proposed modification to K249EV will not cause prohibited interference to KRMW as the interfering contour does not reach the ground.

K249EV Appl.
Johnson, AR
Latitude: 36-08-50 N
Longitude: 094-11-13 W
ERP: 0.095 kW
HAAT: 172.67 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 557.9 m
Elevation: 413.9 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

KRMW
Cedarville, AR
BLH20111209CDV
Latitude: 35-51-00 N
Longitude: 094-22-59 W
ERP: 21.00 kW
HAAT: 230.9 m
Channel: 235
Frequency: 94.9 MHz
AMSL Height: 661.0 m
Elevation: 536.4 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC



Screen 3 - Results

Results of Calculation

Distance to Contour = 0.279 kilometers

Back to Numeric Entries | Back to Initial Selections

Input Data from Screens 1 and 2

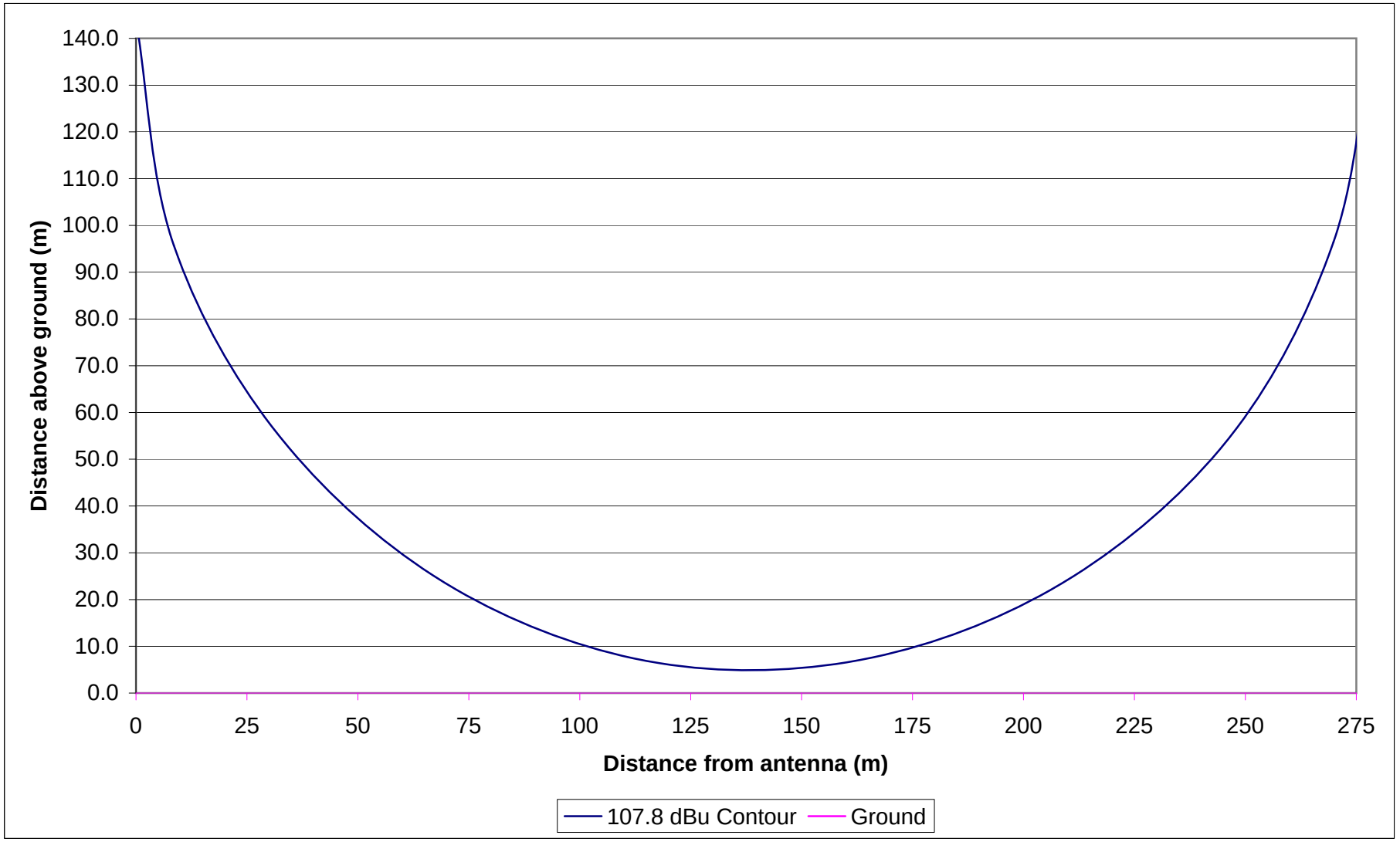
ERP = 0.095 kW
HAAT = 173.0 meters
Field Strength = 107.8 dBu

Distances are in **meters and kilometers**
Power is in **kW (kilowatts)**
Field Strength is in **dBu**
FM and NTSC TV Channels 2 through 6
F(50,10) for interfering contours selected
Find Distance, given a Field Strength

K249EV Johnson, AR

Section 74.1204 Contour Protection to KRMW Cedarville, AR

(107.8 dBu interfering contour shown)

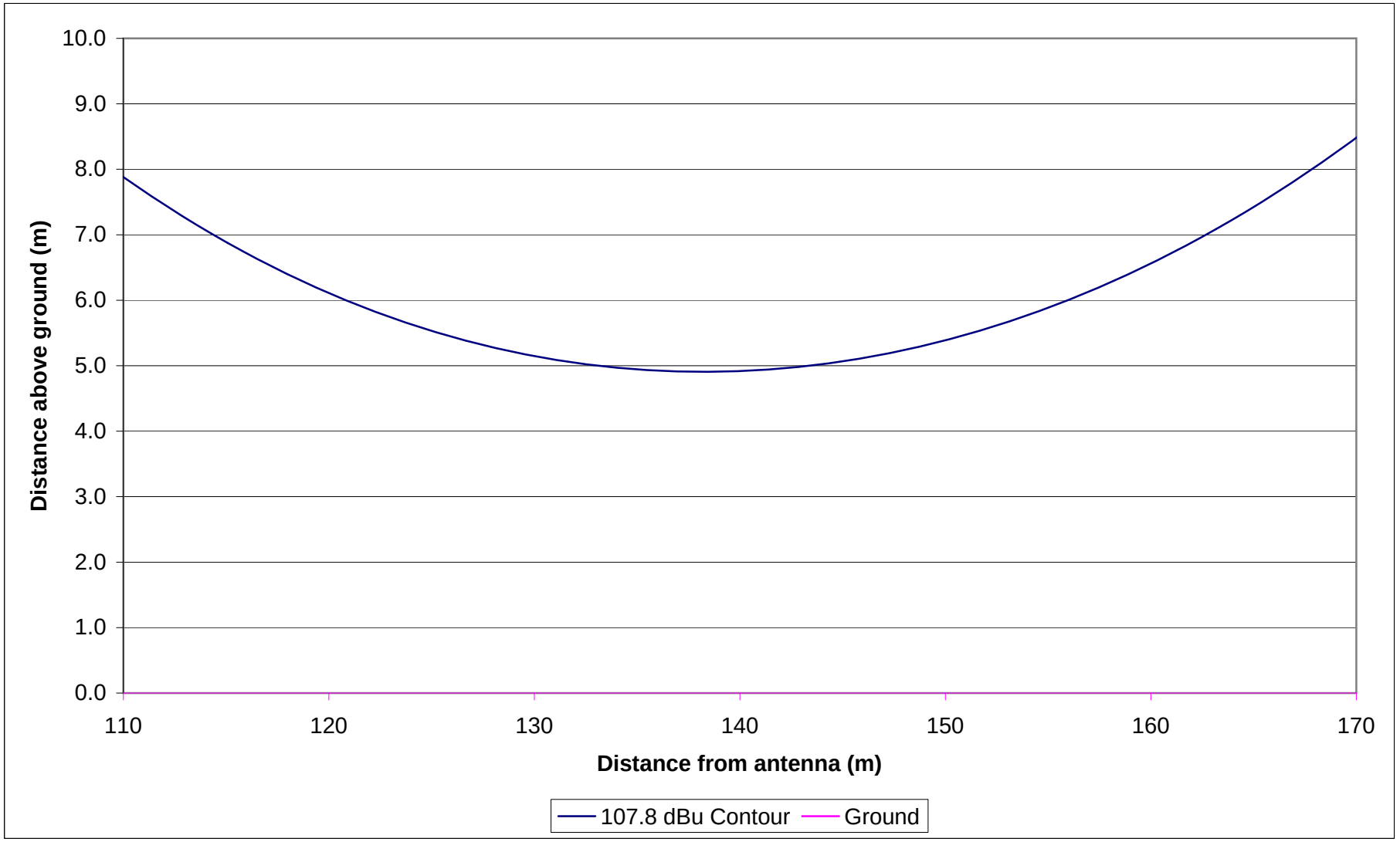


The Interfering contour with respect to KRMW does not reach the ground.

K249EV Johnson, AR

Section 74.1204 Contour Protection to KRMW Cedarville, AR

(Close-Up of 107.8 dBu interfering contour shown)



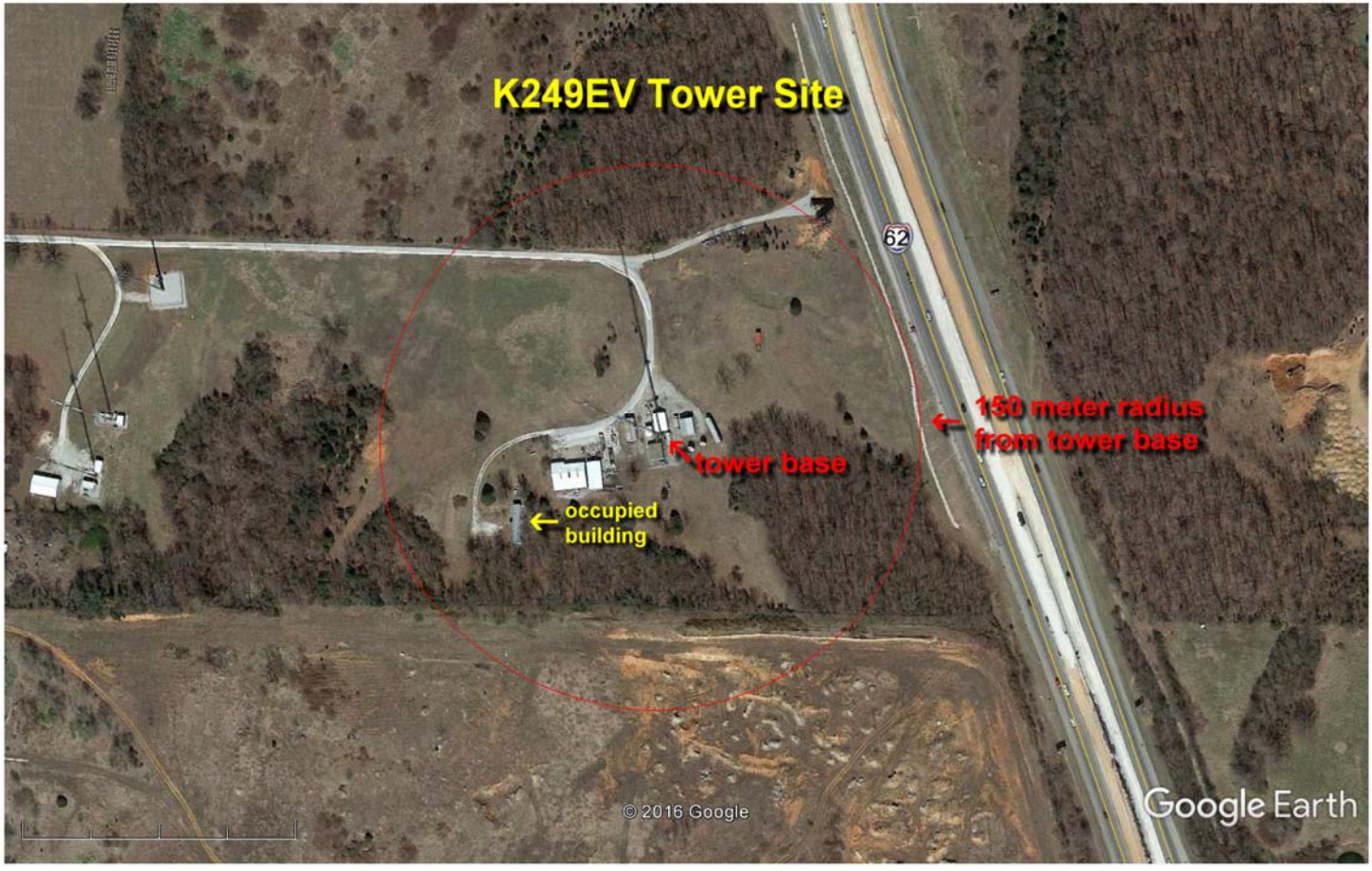
The Interfering contour with respect to KRMW does not reach the ground.

Angle of				107.8 dBu
Elevation	Relative	ERP	ERP	Contour
(Degrees)	Field	(watts)	(dBk)	(Meters)
-------	-------	-------	-------	-------
0	1.000	95.0	-10.223	279
-10	0.985	92.2	-10.354	274
-20	0.940	83.9	-10.760	262
-30	0.866	71.2	-11.472	241
-40	0.766	55.9	-12.538	213
-50	0.643	39.3	-14.059	179
-60	0.500	23.7	-16.243	139
-70	0.320	11.1	-19.542	95
-80	0.174	2.9	-25.412	49
-90	0.001	0.0	-70.223	0

Angle of Elevation (Degrees)	Relative Field	ERP (dBk)	107.8 Contour (Meters)
0	1.000	-10.223	279
10	0.985	-10.354	274
20	0.940	-10.760	262
30	0.866	-11.472	241
40	0.766	-12.538	213
50	0.643	-14.059	179
60	0.500	-16.243	139
70	0.320	-19.542	95
80	0.174	-25.412	49
90	0.001	-70.223	0

Θ (°)	Θ (radians)	R (m)
0	0	279
10	0.175	274
20	0.349	262
30	0.524	241
40	0.698	213
50	0.873	179
60	1.047	139
70	1.222	95
80	1.396	49
90	1.571	0

x'	y'	y = 144 - y'	Gnd
279	0	144.0	0
269.8	47.6	96.4	0
246.2	89.6	54.4	0
208.7	120.5	23.5	0
163.2	136.9	7.1	0
115.1	137.1	6.9	0
69.5	120.4	23.6	0
32.5	89.3	54.7	0
8.5	48.3	95.7	0
0.0	0	144	0

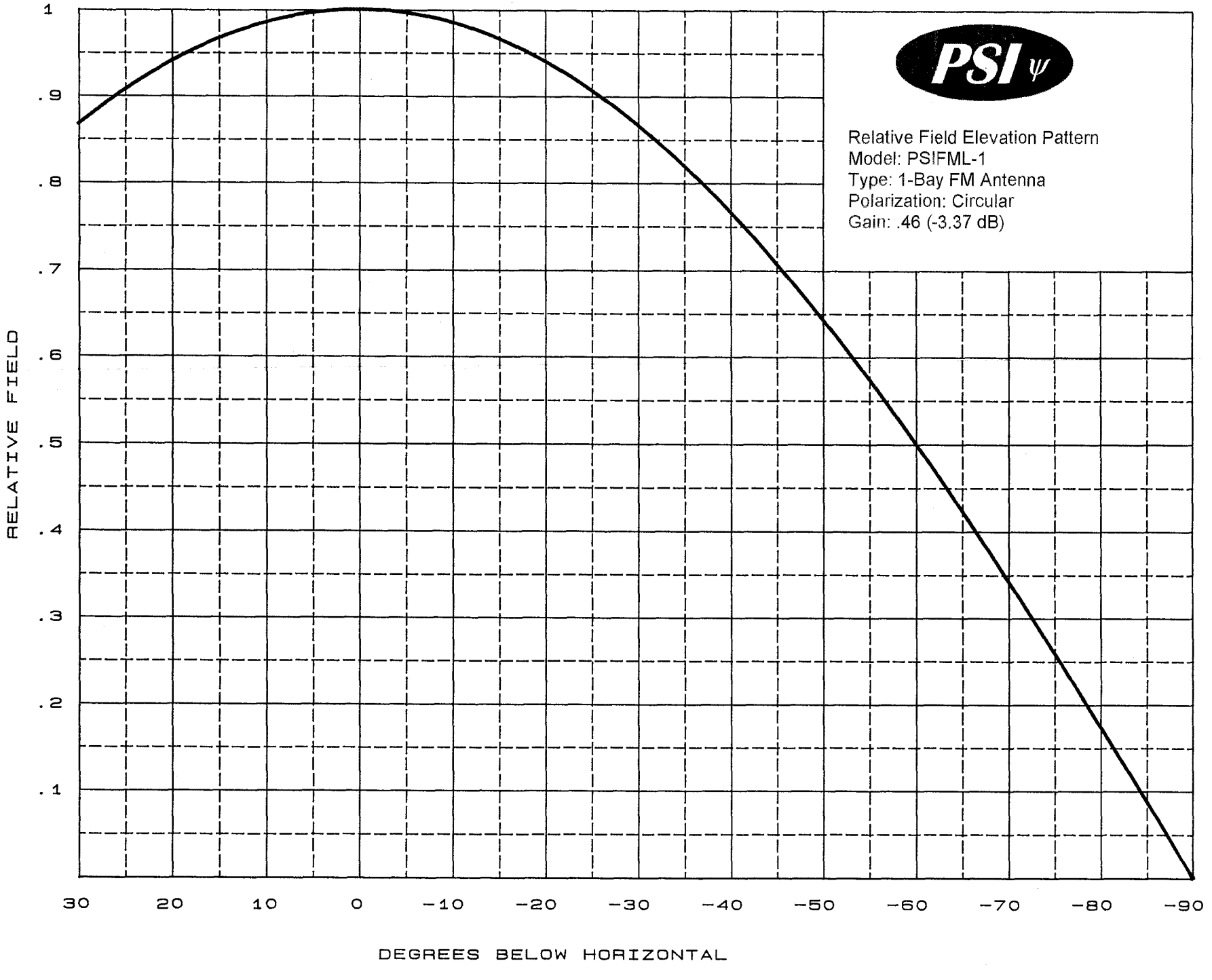


Google Earth

feet 1000
meters 300

USGS Map Name: Springdale, AR Map MRC: 36094B2
Map Center: N36° 8' 50" W94° 11' 13" Datum: NAD27 Zoom: 4m/pixel

Note: Areas shaded green have 1:24K topographic map coverage


PSI ψ
Relative Field Elevation Pattern
Model: PSIFML-1
Type: 1-Bay FM Antenna
Polarization: Circular
Gain: .46 (-3.37 dB)
RELATIVE FIELD
1
.9
.8
.7
.6
.5
.4
.3
.2
.1
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
DEGREES BELOW HORIZONTAL

Propagation Systems Inc.

Elevation Pattern Tabulation

Antenna: PSIFML-1

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.643	-3.839	-10.0	0.985	-0.134
-89.0	0.017	-35.177	-49.0	0.656	-3.663	-9.0	0.988	-0.109
-88.0	0.035	-29.156	-48.0	0.669	-3.490	-8.0	0.990	-0.086
-87.0	0.052	-25.634	-47.0	0.682	-3.325	-7.0	0.992	-0.066
-86.0	0.070	-23.136	-46.0	0.695	-3.166	-6.0	0.994	-0.049
-85.0	0.087	-21.198	-45.0	0.707	-3.012	-5.0	0.996	-0.034
-84.0	0.104	-19.626	-44.0	0.719	-2.862	-4.0	0.997	-0.022
-83.0	0.122	-18.286	-43.0	0.731	-2.719	-3.0	0.998	-0.013
-82.0	0.139	-17.134	-42.0	0.743	-2.580	-2.0	0.999	-0.007
-81.0	0.156	-16.117	-41.0	0.755	-2.445	-1.0	1.000	-0.003
-80.0	0.174	-15.207	-40.0	0.766	-2.316	0.0	1.000	0.000
-79.0	0.191	-14.390	-39.0	0.777	-2.190	1.0	1.000	-0.003
-78.0	0.208	-13.644	-38.0	0.788	-2.071	2.0	0.999	-0.007
-77.0	0.225	-12.962	-37.0	0.798	-1.955	3.0	0.998	-0.013
-76.0	0.242	-12.330	-36.0	0.809	-1.842	4.0	0.997	-0.022
-75.0	0.259	-11.741	-35.0	0.819	-1.733	5.0	0.996	-0.034
-74.0	0.276	-11.194	-34.0	0.829	-1.630	6.0	0.994	-0.049
-73.0	0.292	-10.684	-33.0	0.839	-1.529	7.0	0.992	-0.066
-72.0	0.309	-10.203	-32.0	0.848	-1.432	8.0	0.990	-0.086
-71.0	0.325	-9.750	-31.0	0.857	-1.339	9.0	0.988	-0.109
-70.0	0.342	-9.320	-30.0	0.866	-1.251	10.0	0.985	-0.134
-69.0	0.358	-8.914	-29.0	0.875	-1.164	11.0	0.982	-0.162
-68.0	0.375	-8.530	-28.0	0.883	-1.082	12.0	0.978	-0.193
-67.0	0.391	-8.165	-27.0	0.891	-1.003	13.0	0.974	-0.227
-66.0	0.407	-7.815	-26.0	0.899	-0.928	14.0	0.970	-0.263
-65.0	0.423	-7.482	-25.0	0.906	-0.855	15.0	0.966	-0.301
-64.0	0.438	-7.164	-24.0	0.913	-0.786	16.0	0.961	-0.344
-63.0	0.454	-6.860	-23.0	0.920	-0.720	17.0	0.956	-0.389
-62.0	0.469	-6.569	-22.0	0.927	-0.657	18.0	0.951	-0.436
-61.0	0.485	-6.291	-21.0	0.933	-0.598	19.0	0.945	-0.487
-60.0	0.500	-6.023	-20.0	0.940	-0.542	20.0	0.940	-0.540
-59.0	0.515	-5.764	-19.0	0.945	-0.487	21.0	0.933	-0.598
-58.0	0.530	-5.517	-18.0	0.951	-0.437	22.0	0.927	-0.657
-57.0	0.545	-5.279	-17.0	0.956	-0.389	23.0	0.920	-0.720
-56.0	0.559	-5.050	-16.0	0.961	-0.344	24.0	0.913	-0.786
-55.0	0.573	-4.830	-15.0	0.966	-0.301	25.0	0.906	-0.855
-54.0	0.588	-4.616	-14.0	0.970	-0.263	26.0	0.899	-0.927
-53.0	0.602	-4.413	-13.0	0.974	-0.227	27.0	0.891	-1.003
-52.0	0.616	-4.214	-12.0	0.978	-0.193	28.0	0.883	-1.082
-51.0	0.629	-4.024	-11.0	0.982	-0.162	29.0	0.875	-1.164
						30.0	0.866	-1.251

file: FML 1-bay elevation tabulation

revision: A

Date: 1/28/08

Exhibit 13-E
Section 74.1204
Contour Protection to KSEC

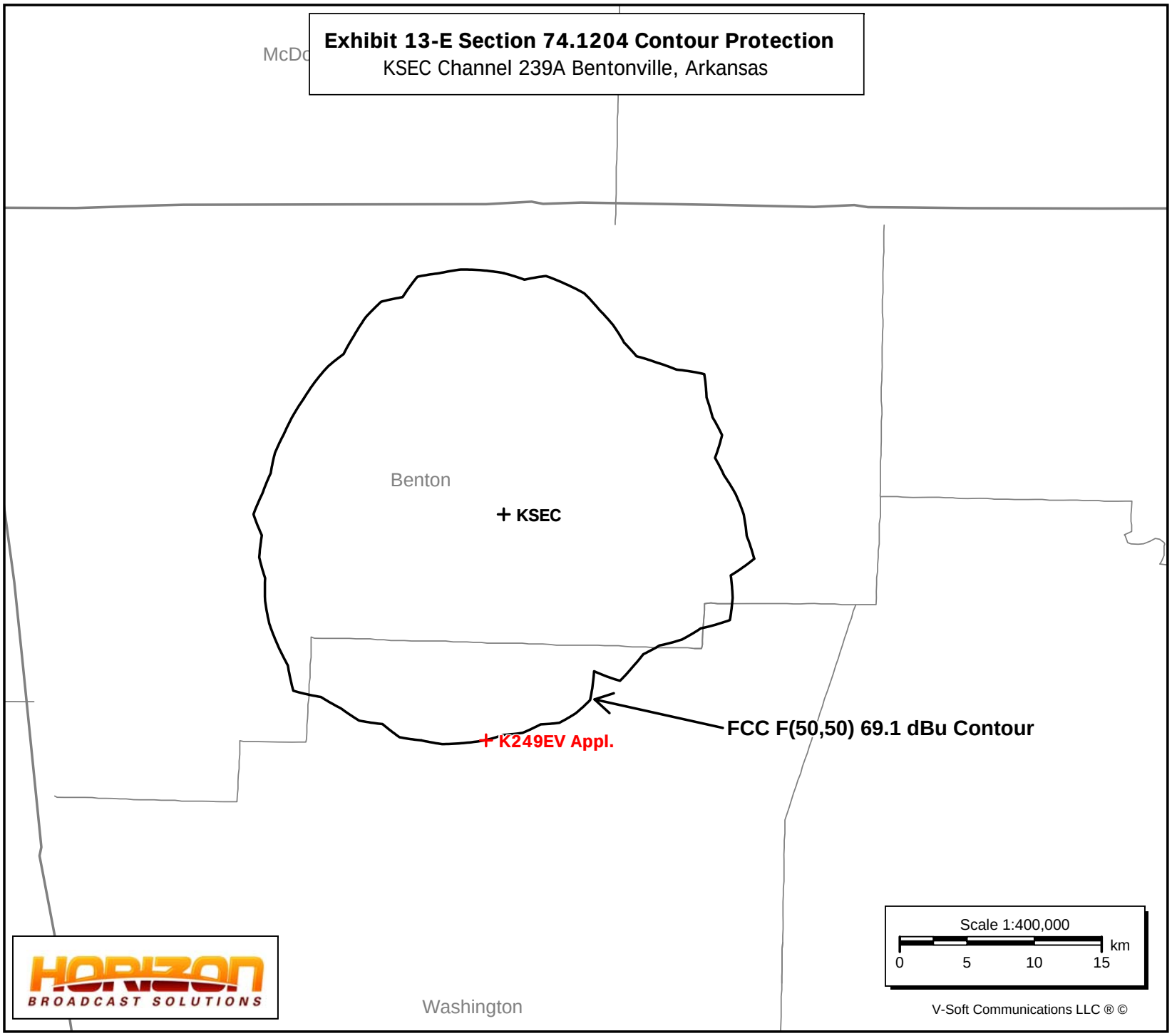
This comprehensive exhibit has been prepared to demonstrate that the K249EV modification will not cause prohibited interference to KSEC, Channel 239A, Bentonville, AR. The KSEC F(50,50) protected contour at the K249EV application site is 69.1 dBu. Therefore the K249EV F(50,10) interfering contour with respect to KSEC is the 109.1 dBu contour. Using the FCC's FM propagation curves program (see attached), the 109.1 dBu contour was calculated to extend 240 meters from the antenna.

The proposed K249EV transmit antenna will be located 144 meters above ground level. As shown on the accompanying spreadsheet and chart, using the vertical elevation pattern data for the PSI Model FML one bay antenna the ERP and contour distances have been calculated every 10 degrees from 0 degrees to 90 degrees. The contour distance decreases from a maximum distance of 240 meters at 0 degrees to 0 meters at 90 degrees. That data was calculated in the attached charts to plot the distance the interfering contour extends into free space. The contour does not reach the ground. The contour comes to within approximately 24 meters (78.7 feet) of ground level at approximately 130 meters (426 ft.) from the tower base. The tower is located at the highest elevation in the immediate area and there are no multistory buildings in the vicinity of the tower. Therefore is believed that the proposed modification to K249EV will not cause

prohibited interference to KSEC as the interfering contour does not reach the ground.

K249EV Appl.
Johnson, AR
Latitude: 36-08-50 N
Longitude: 094-11-13 W
ERP: 0.095 kW
HAAT: 172.67 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 557.9 m
Elevation: 413.9 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

KSEC
Bentonville, AR
BLH20020131AAE
Latitude: 36-17-54 N
Longitude: 094-10-21 W
ERP: 6.00 kW
HAAT: 100.0 m
Channel: 239
Frequency: 95.7 MHz
AMSL Height: 488.0 m
Elevation: 405.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC



Screen 3 - Results

Results of Calculation

Distance to Contour = 0.240 kilometers

Back to Numeric Entries | Back to Initial Selections

Input Data from Screens 1 and 2

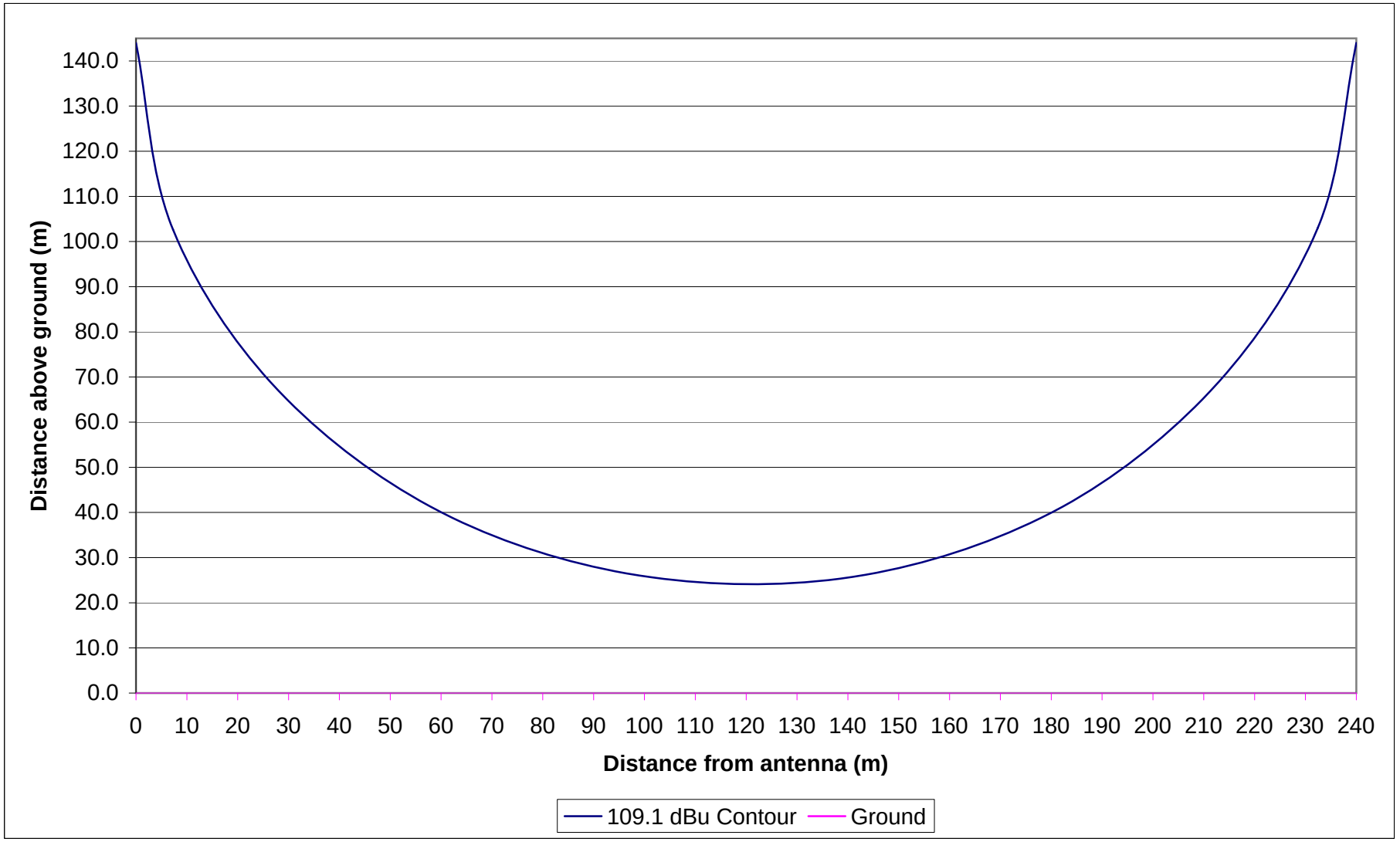
ERP = 0.095 kW
HAAT = 173.0 meters
Field Strength = 109.1 dBu

Distances are in **meters and kilometers**
Power is in **kW (kilowatts)**
Field Strength is in **dBu**
FM and NTSC TV Channels 2 through 6
F(50,10) for interfering contours selected
Find Distance, given a Field Strength

K249EV Johnson, AR

Section 74.1204 Contour Protection to KSEC Bentonville, AR

(109.1 dBu interfering contour shown)



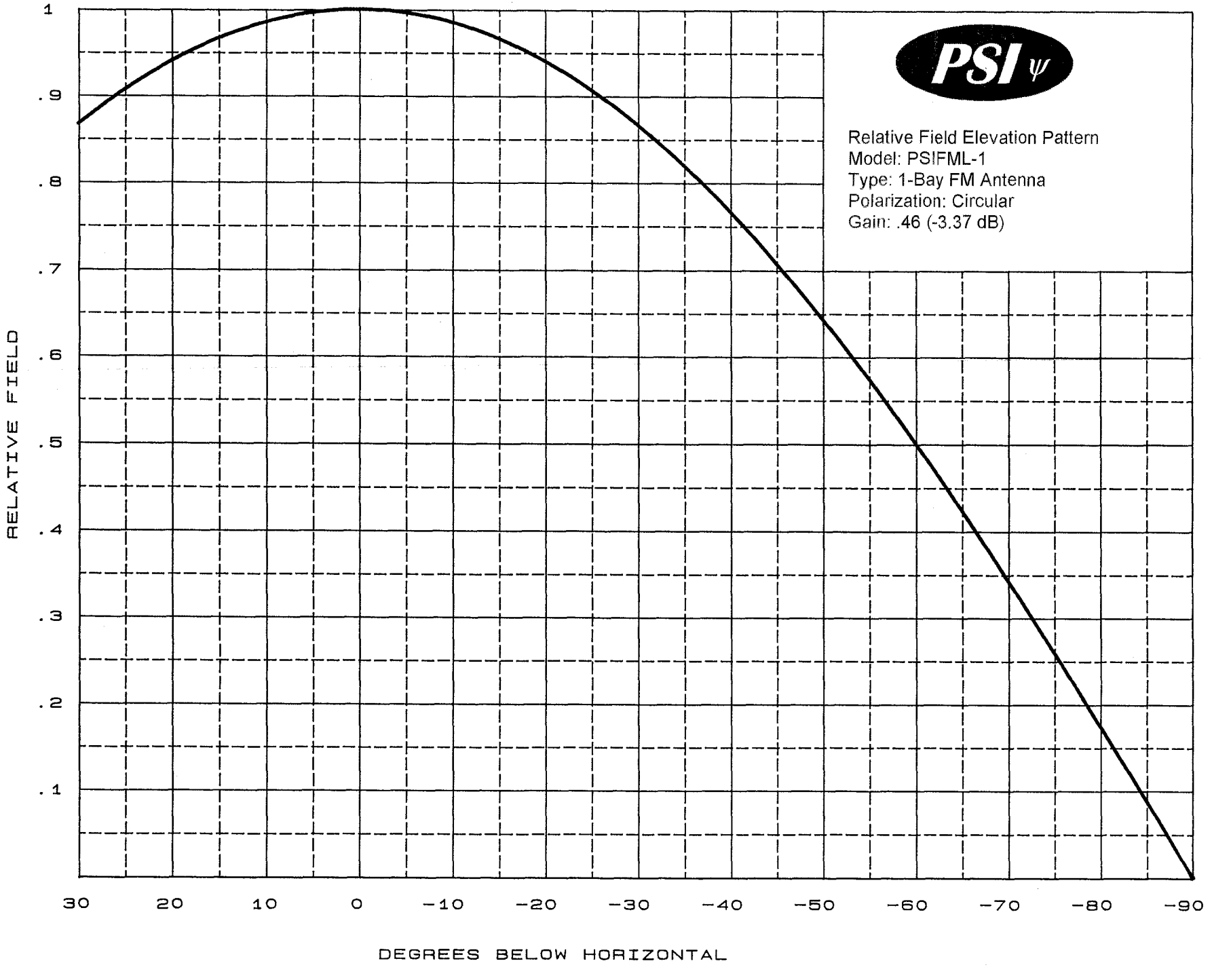
The Interfering contour with respect to KSEC does not reach the ground.

Angle of Elevation (Degrees)	Relative Field	ERP (watts)	ERP (dBk)	109.1 dBu Contour (Meters)
-------	-------	-------	-------	-------
0	1.000	95.0	-10.223	240
-10	0.985	92.2	-10.354	236
-20	0.940	83.9	-10.760	225
-30	0.866	71.2	-11.472	208
-40	0.766	55.9	-12.538	184
-50	0.643	39.3	-14.059	154
-60	0.500	23.7	-16.243	120
-70	0.320	11.1	-19.542	82
-80	0.174	2.9	-25.412	42
-90	0.001	0.0	-70.223	0

Angle of Elevation (Degrees)	Relative Field	ERP (dBk)	109.1 dBu Contour (Meters)
0	1.000	-10.223	240
10	0.985	-10.354	236
20	0.940	-10.760	225
30	0.866	-11.472	208
40	0.766	-12.538	184
50	0.643	-14.059	154
60	0.500	-16.243	120
70	0.320	-19.542	82
80	0.174	-25.412	42
90	0.001	-70.223	0

Θ (°)	Θ (radians)	R (m)
0	0	240
10	0.175	236
20	0.349	225
30	0.524	208
40	0.698	184
50	0.873	154
60	1.047	120
70	1.222	82
80	1.396	42
90	1.571	0

x'	y'	y = 144 - y'	Gnd
240	0	144.0	0
232.4	41.0	103.0	0
211.4	77.0	67.0	0
180.1	104	40	0
141.0	118.3	25.7	0
99.0	118.0	26.0	0
60.0	103.9	40.1	0
28.0	77.1	66.9	0
7.3	41.4	102.6	0
0.0	0	144	0


PSI ψ
Relative Field Elevation Pattern
Model: PSIFML-1
Type: 1-Bay FM Antenna
Polarization: Circular
Gain: .46 (-3.37 dB)
RELATIVE FIELD
1
.9
.8
.7
.6
.5
.4
.3
.2
.1
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
DEGREES BELOW HORIZONTAL

Propagation Systems Inc.

Elevation Pattern Tabulation

Antenna: PSIFML-1

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-90.0	0.001	-60.000	-50.0	0.643	-3.839	-10.0	0.985	-0.134
-89.0	0.017	-35.177	-49.0	0.656	-3.663	-9.0	0.988	-0.109
-88.0	0.035	-29.156	-48.0	0.669	-3.490	-8.0	0.990	-0.086
-87.0	0.052	-25.634	-47.0	0.682	-3.325	-7.0	0.992	-0.066
-86.0	0.070	-23.136	-46.0	0.695	-3.166	-6.0	0.994	-0.049
-85.0	0.087	-21.198	-45.0	0.707	-3.012	-5.0	0.996	-0.034
-84.0	0.104	-19.626	-44.0	0.719	-2.862	-4.0	0.997	-0.022
-83.0	0.122	-18.286	-43.0	0.731	-2.719	-3.0	0.998	-0.013
-82.0	0.139	-17.134	-42.0	0.743	-2.580	-2.0	0.999	-0.007
-81.0	0.156	-16.117	-41.0	0.755	-2.445	-1.0	1.000	-0.003
-80.0	0.174	-15.207	-40.0	0.766	-2.316	0.0	1.000	0.000
-79.0	0.191	-14.390	-39.0	0.777	-2.190	1.0	1.000	-0.003
-78.0	0.208	-13.644	-38.0	0.788	-2.071	2.0	0.999	-0.007
-77.0	0.225	-12.962	-37.0	0.798	-1.955	3.0	0.998	-0.013
-76.0	0.242	-12.330	-36.0	0.809	-1.842	4.0	0.997	-0.022
-75.0	0.259	-11.741	-35.0	0.819	-1.733	5.0	0.996	-0.034
-74.0	0.276	-11.194	-34.0	0.829	-1.630	6.0	0.994	-0.049
-73.0	0.292	-10.684	-33.0	0.839	-1.529	7.0	0.992	-0.066
-72.0	0.309	-10.203	-32.0	0.848	-1.432	8.0	0.990	-0.086
-71.0	0.325	-9.750	-31.0	0.857	-1.339	9.0	0.988	-0.109
-70.0	0.342	-9.320	-30.0	0.866	-1.251	10.0	0.985	-0.134
-69.0	0.358	-8.914	-29.0	0.875	-1.164	11.0	0.982	-0.162
-68.0	0.375	-8.530	-28.0	0.883	-1.082	12.0	0.978	-0.193
-67.0	0.391	-8.165	-27.0	0.891	-1.003	13.0	0.974	-0.227
-66.0	0.407	-7.815	-26.0	0.899	-0.928	14.0	0.970	-0.263
-65.0	0.423	-7.482	-25.0	0.906	-0.855	15.0	0.966	-0.301
-64.0	0.438	-7.164	-24.0	0.913	-0.786	16.0	0.961	-0.344
-63.0	0.454	-6.860	-23.0	0.920	-0.720	17.0	0.956	-0.389
-62.0	0.469	-6.569	-22.0	0.927	-0.657	18.0	0.951	-0.436
-61.0	0.485	-6.291	-21.0	0.933	-0.598	19.0	0.945	-0.487
-60.0	0.500	-6.023	-20.0	0.940	-0.542	20.0	0.940	-0.540
-59.0	0.515	-5.764	-19.0	0.945	-0.487	21.0	0.933	-0.598
-58.0	0.530	-5.517	-18.0	0.951	-0.437	22.0	0.927	-0.657
-57.0	0.545	-5.279	-17.0	0.956	-0.389	23.0	0.920	-0.720
-56.0	0.559	-5.050	-16.0	0.961	-0.344	24.0	0.913	-0.786
-55.0	0.573	-4.830	-15.0	0.966	-0.301	25.0	0.906	-0.855
-54.0	0.588	-4.616	-14.0	0.970	-0.263	26.0	0.899	-0.927
-53.0	0.602	-4.413	-13.0	0.974	-0.227	27.0	0.891	-1.003
-52.0	0.616	-4.214	-12.0	0.978	-0.193	28.0	0.883	-1.082
-51.0	0.629	-4.024	-11.0	0.982	-0.162	29.0	0.875	-1.164
						30.0	0.866	-1.251

file: FML 1-bay elevation tabulation

revision: A

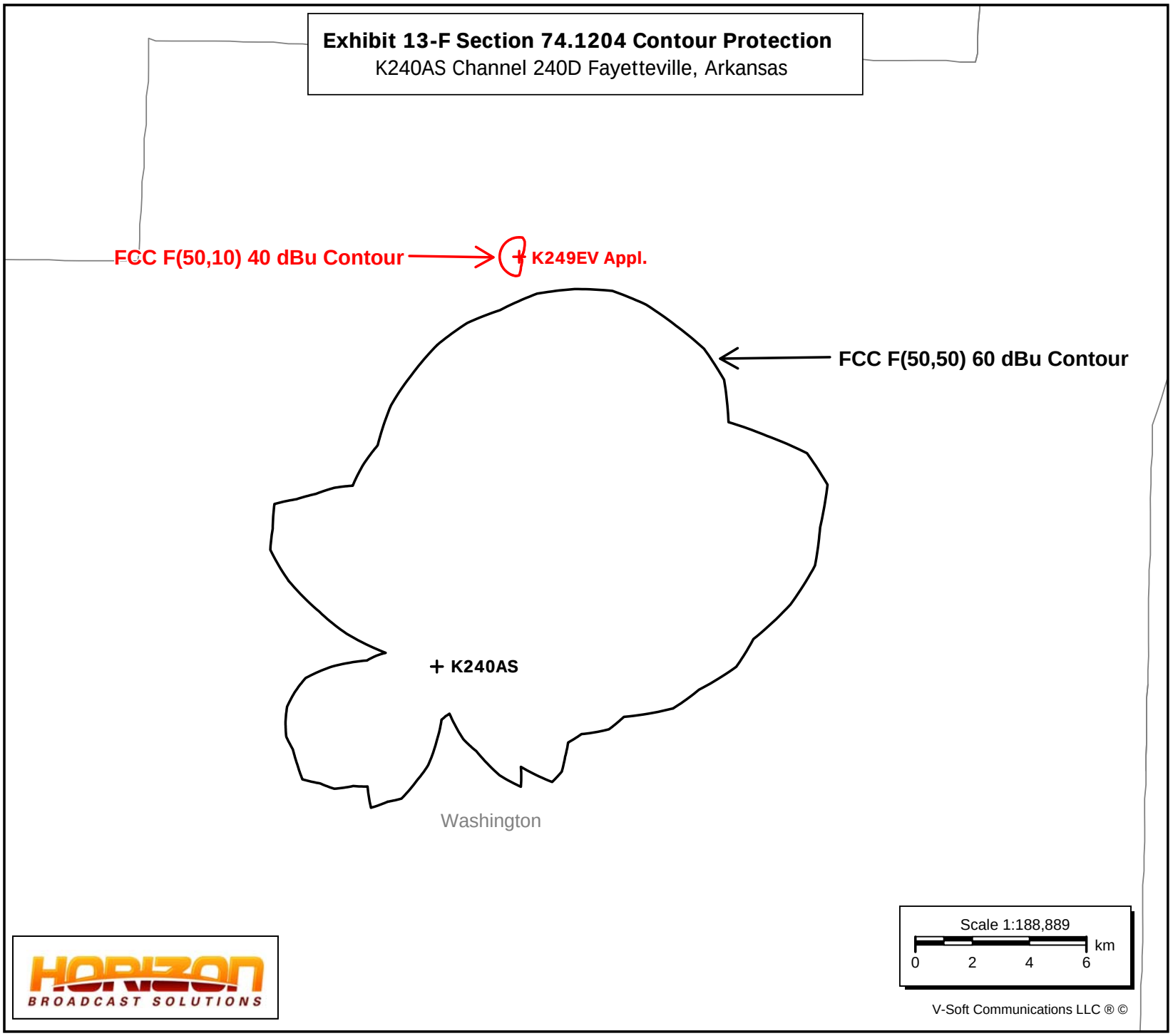
Date: 1/28/08

K249EV Appl.
Johnson, AR
Latitude: 36-08-50 N
Longitude: 094-11-13 W
ERP: 0.095 kW
HAAT: 172.67 m
Channel: 237
Frequency: 95.3 MHz
AMSL Height: 557.9 m
Elevation: 413.9 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

K240AS
Fayetteville, AR
BLFT19830726MJ
Latitude: 36-01-04 N
Longitude: 094-13-08 W
ERP: 0.142 kW
HAAT: 173.0 m
Channel: 240
Frequency: 95.9 MHz
AMSL Height: 576.0 m
Elevation: 561.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: FCC Model
Loc. Variability: 50.0%
Time Variability: 50.0%
HAAT Mthd: FCC

Exhibit 13-F Section 74.1204 Contour Protection

K240AS Channel 240D Fayetteville, Arkansas



HORIZON BROADCAST SOLUTIONS