

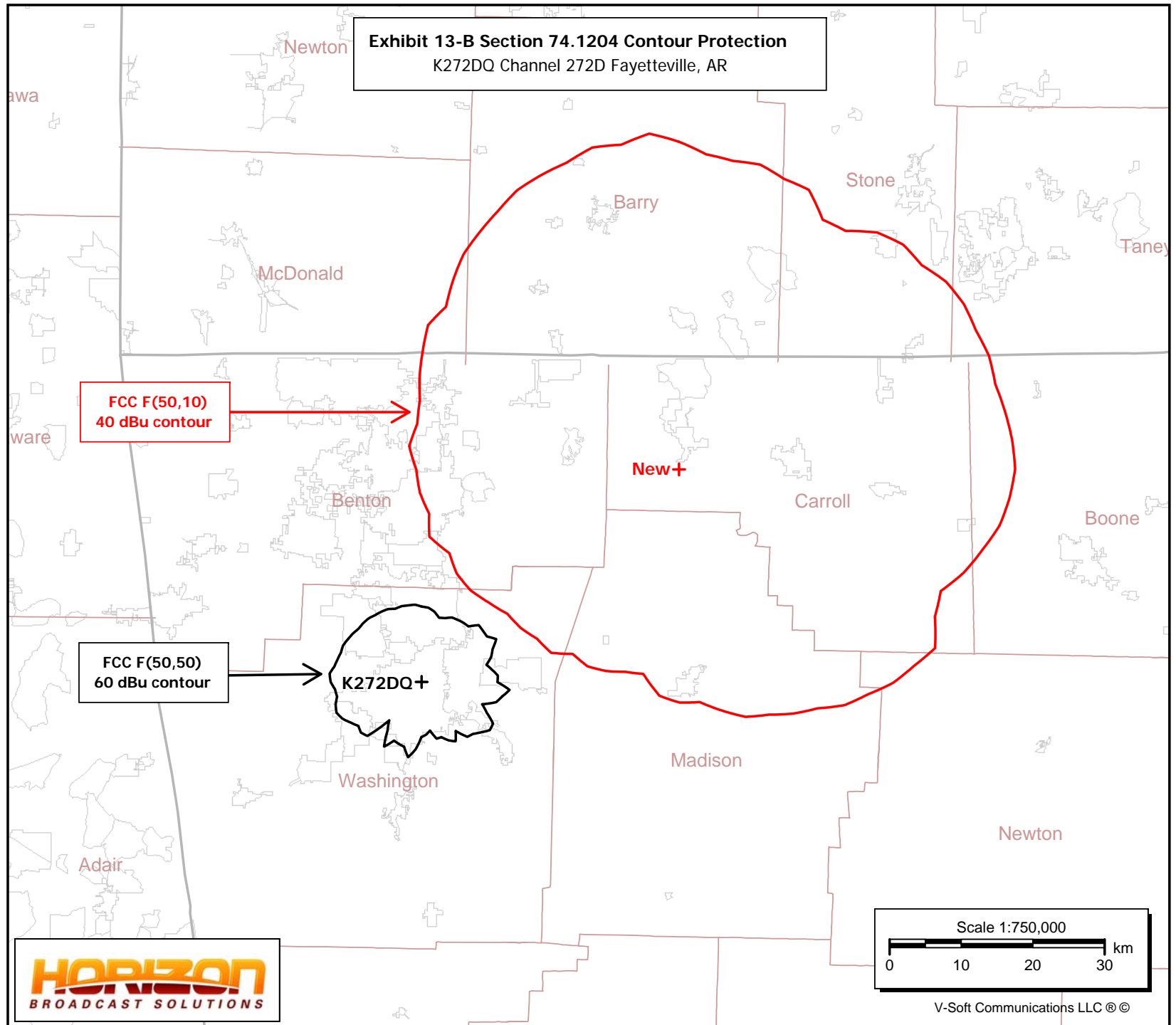
### New

Eureka Springs, AR  
Latitude: 36-21-38 N  
Longitude: 093-44-54 W  
ERP: 0.14 kW  
HAAT: 180 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 566.0 m  
Elevation: 500.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

### K272DQ

Fayetteville, AR  
BLFT19940715TJ  
Latitude: 36-05-36 N  
Longitude: 094-08-50 W  
ERP: 0.22 kW  
HAAT: 77.0 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 467.0 m  
Elevation: 454.99 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

### Exhibit 13-B Section 74.1204 Contour Protection K272DQ Channel 272D Fayetteville, AR



**Exhibit 13-D**  
**Section 74.1204**  
**Contour Protection to KHBZ**

This comprehensive exhibit has been prepared to demonstrate that the proposed new FM translator will not cause prohibited interference to KHBZ, Channel 275C1, Harrison, AR. This statement demonstrates that a lack of population and/or other factors allow this proposal to be compliant with Section 74.1204. The process commonly called “Living Way,” allows for the use of U/D Analysis, also known as “signal strength ratio methodology.” In this instant case the facilities to be protected are third adjacent and are to be afforded protection from signals 40 dB stronger than they present in the location of the proposed antenna location.

The KHBZ F(50,50) protected contour at the proposed new FM translator application site is 72.4 dBu. Therefore the proposed new FM translator F(50,10) interfering contour with respect to KHBZ is the 112.4 dBu contour. Using the FCC's FM propagation curves program (see attached), the 112.4 dBu contour was calculated to extend 199 meters from the antenna.

The proposed new FM translator transmit antenna will be located 66 meters above ground level. As shown on the accompanying spreadsheet and chart, using the vertical elevation pattern data (see attached) for the Nicom BKG77 two bay 0.85 wavelength antenna the ERP and contour distances have been calculated every 10 degrees from 0 degrees to 90 degrees. The contour distance ranges from a maximum distance of 199 meters at 0 degrees to 23 meters at 30 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 interfering contour comes to within approximately 9 meters of ground level at 34 meters from the tower base. The nearest occupied building is a residence located approximately 137 meters from the tower base. Therefore is believed that the proposed new FM translator will not cause prohibited interference to KHBZ as the interfering contour does not reach the ground.

Select Contour Type:	<div>F(50,50) Service Contour -- FM and NTSC (analog) TV F(50,10) Interfering Contour F(50,90) Digital TV Service Contour</div>
Select Channel Range: (not TV Virtual Channel)	<div>FM Radio or TV Transmit Channels 2-6 TV Transmit Channels 7-13 TV Transmit Channels 14-69</div>
Find This:	<div>Field Strength, given a Distance (in km) Distance, Given a Field Strength (in dBu) FM ERP, given Distance and Field Strength [F(50,50) Service Contour]</div>
<div>.14 ERP (kW)</div>	<div>Distance (km)</div>
<div>180 HAAT (meters)</div>	<div>112.4 Field (dBu)</div>
<div>Find Result</div> <div>Clear Form</div>	
Results:	
<div>Calculated Distance = <b>0.199 km</b> Free Space equation used to compute distance.</div>	

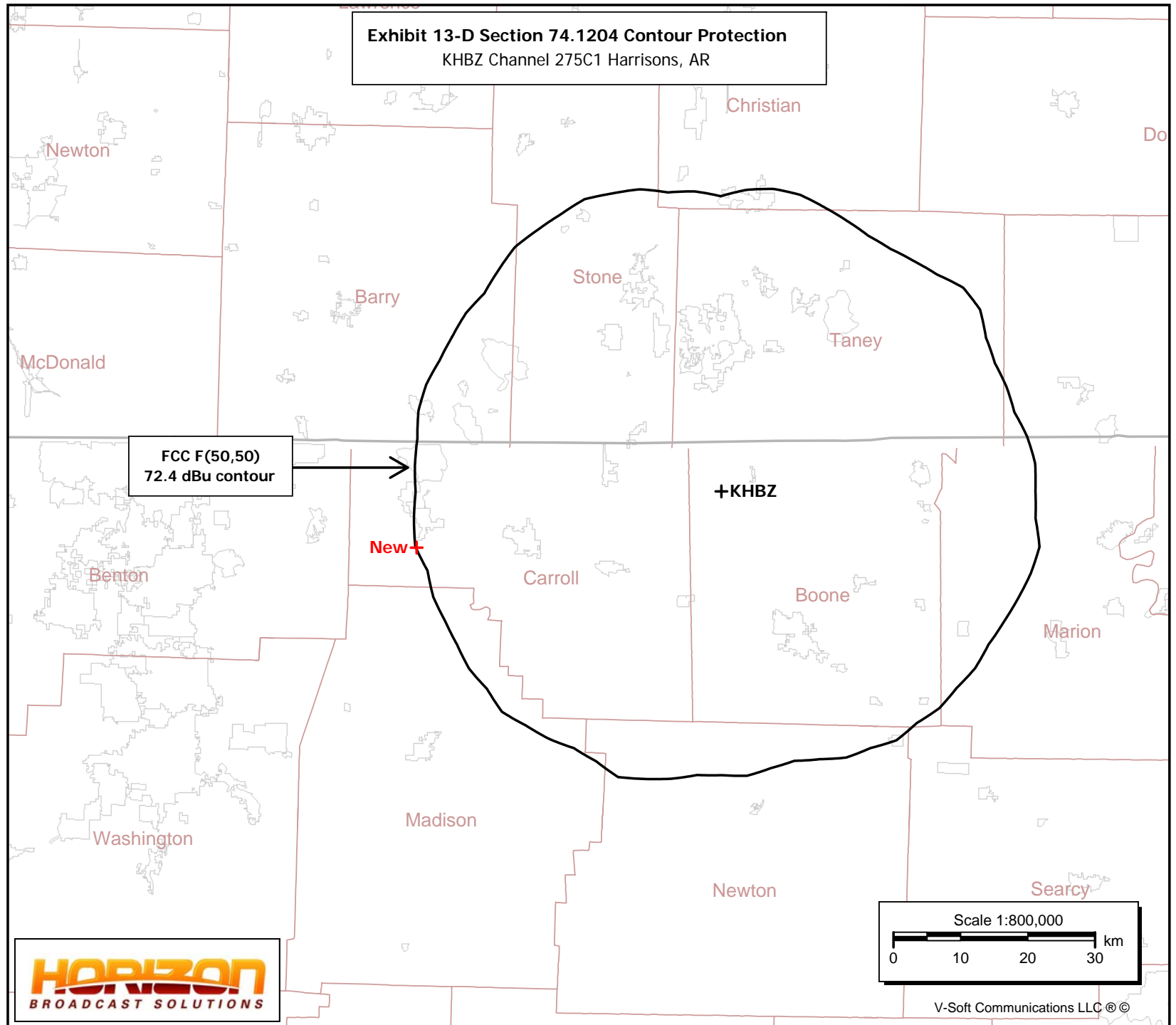
This function uses the FCC's CURVES program to make calculations of the F(50,50) FM and NTSC (analog) TV service curves, the F(50,10) interfering signal curves, and the F(50,90) digital TV service curves. Printable copies of these propagation curves are available at [FM and TV Propagation Curves Graphs \(/media/radio/fm-and-tv-propagation-curves-graphs\)](https://www.fcc.gov/media/radio/fm-and-tv-propagation-curves-graphs).

**New**

Eureka Springs, AR  
Latitude: 36-21-38 N  
Longitude: 093-44-54 W  
ERP: 0.14 kW  
HAAT: 180 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 566.0 m  
Elevation: 500.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

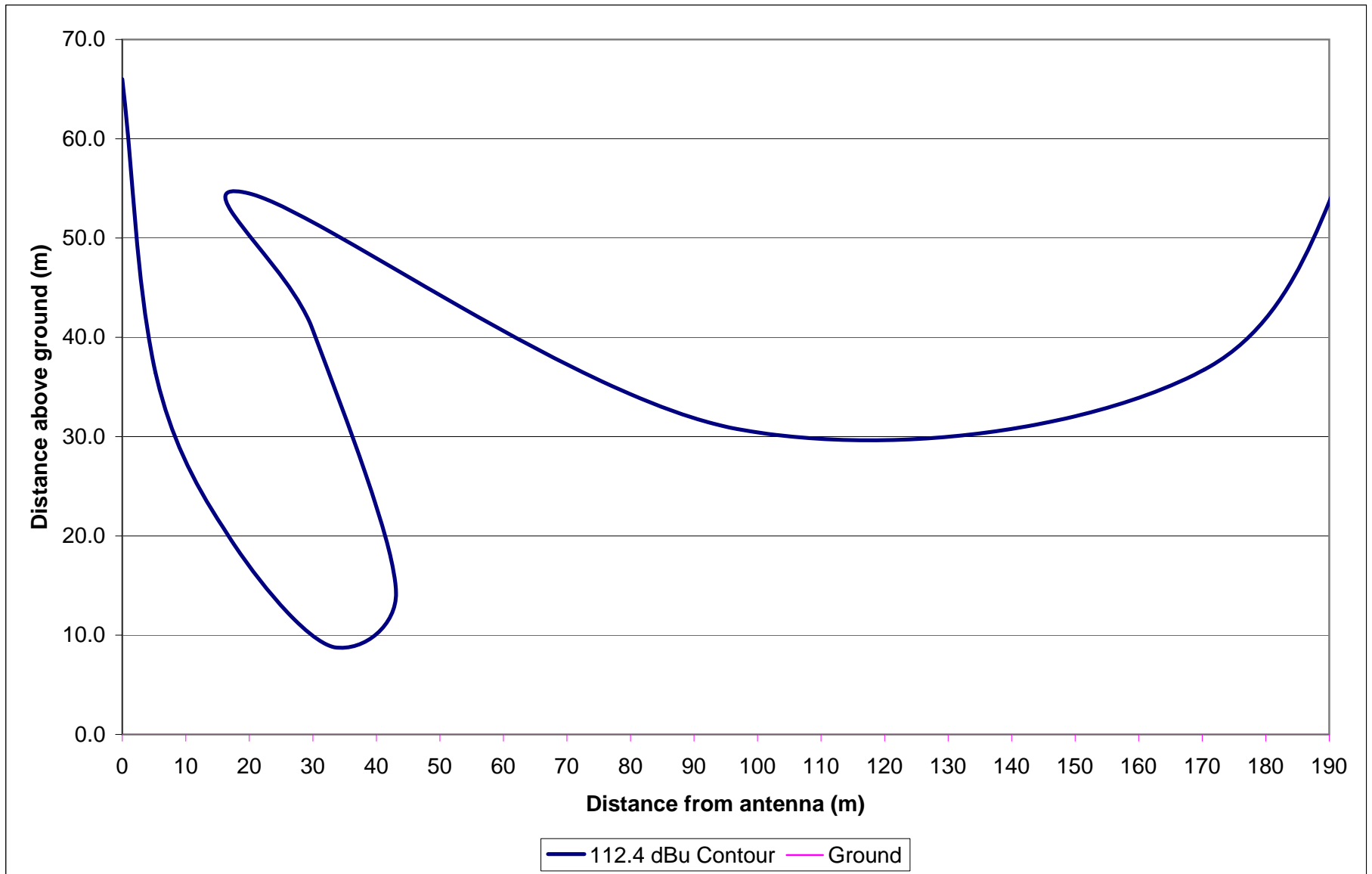
**KHBZ**

Harrison, AR  
BLH20130926BCC  
Latitude: 36-26-10 N  
Longitude: 093-14-36 W  
ERP: 100.00 kW  
HAAT: 293.0 m  
Channel: 275  
Frequency: 102.9 MHz  
AMSL Height: 650.7 m  
Elevation: 494.7 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

**Exhibit 13-D Section 74.1204 Contour Protection**  
KHBZ Channel 275C1 Harrison, AR

**Proposed New Channel 272D - Eureka Springs, AR**  
**Section 74.1204 Contour Protection to KHBZ, Channel CH275C1 Harrison, AR**

(112.4 dBu F(50,10) interfering contour shown)



The proposed CH272D interfering contour with respect to KHBZ does not reach the ground.

Angle of			112.4
Elevation	Relative	ERP	Contour
(Degrees)	Field	(dBk)	(Meters)
-----	-----	-----	-----
0	1.00	-8.539	199
-10	0.871	9.783	173
-20	0.518	-14.252	103
-30	0.112	-27.554	23
-40	0.198	-22.605	39
-50	0.336	-18.012	67
-60	0.331	-18.142	66
-70	0.246	-20.72	49
-90	0.117	-27.175	23

Angle of Elevation (Degrees)	Relative Field	ERP (watts)	ERP (dBk)	112.4 dBu Contour (Meters)
0	1.00	140.0	-8.539	199
10	0.871	106.2	9.783	173
20	0.518	37.6	-14.252	103
30	0.112	1.8	-27.554	23
40	0.198	5.5	-22.605	39
50	0.336	15.8	-18.012	67
60	0.331	15.3	-18.142	66
70	0.246	8.5	-20.72	49
80	0.151	3.2	-24.959	30
90	0.117	1.9	-27.175	23

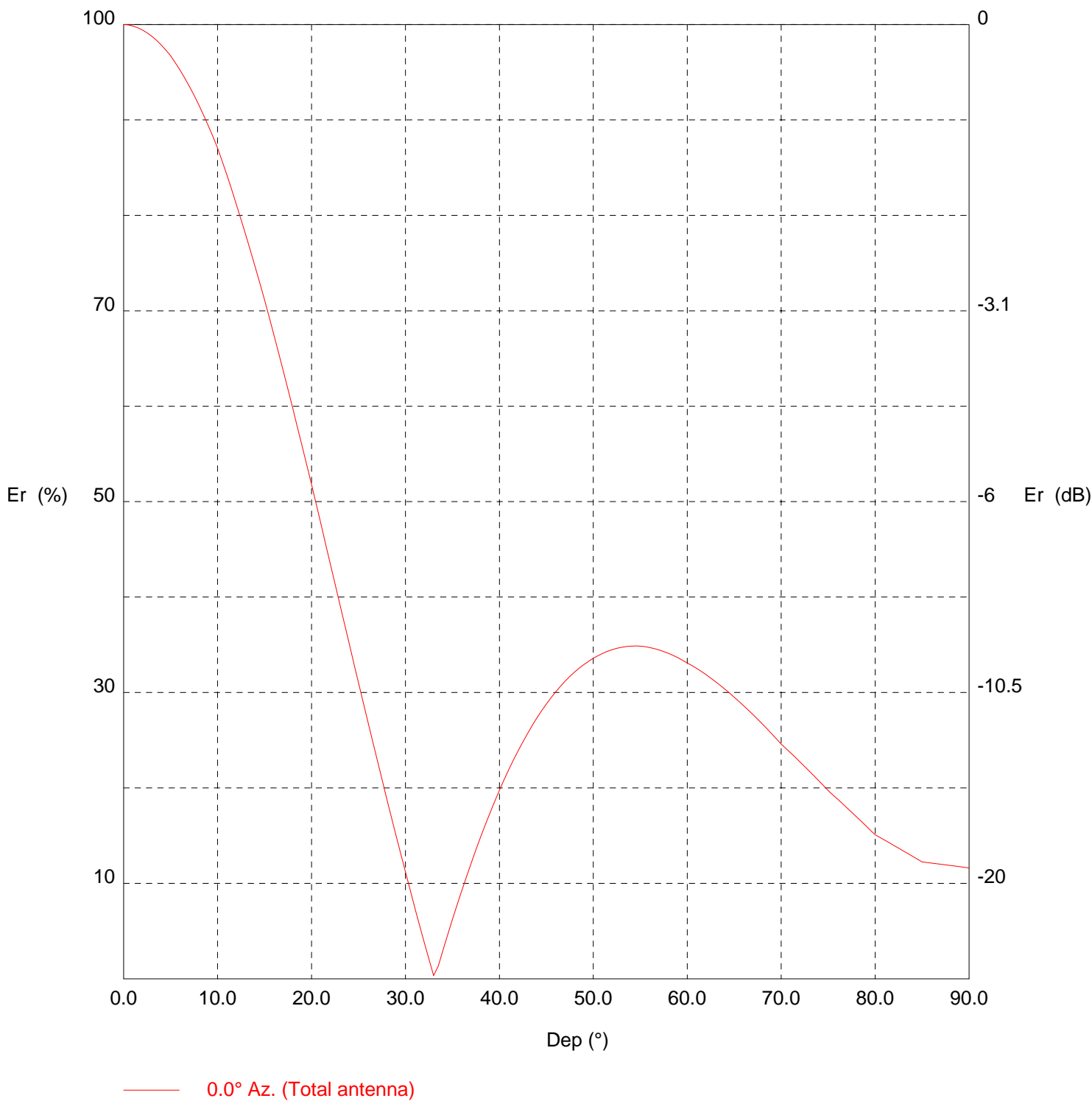
$\Theta$ (°)	$\Theta$ (radians)	R (m)	x'	y'	y = 66 - y'	Gnd
0	0	199	199	0	66.0	0
10	0.175	173	170.4	30.0	36.8	0
20	0.349	103	96.8	35.2	30.8	0
30	0.524	23	19.9	11.5	54.5	0
40	0.698	39	29.9	25.1	40.9	0
50	0.873	67	43.1	51.3	14.7	0
60	1.047	66	33.0	57.2	8.8	0
70	1.222	49	16.8	46.0	20.0	0
80	1.396	30	5.2	29.5	36.5	0
90	1.571	23	0.0	23	66	0



TX station: BKG77/2 GENERIC  
Frequency: 98.10 MHz

Site name: 3/4 WAVE SEPARATION

Vertical diagram



TX station: BKG77/2 GENERIC

Site name: 3/4 WAVE SEPARATION

Frequency: 98.10 MHz

## Vertical diagram at an azimuth of 0° degrees

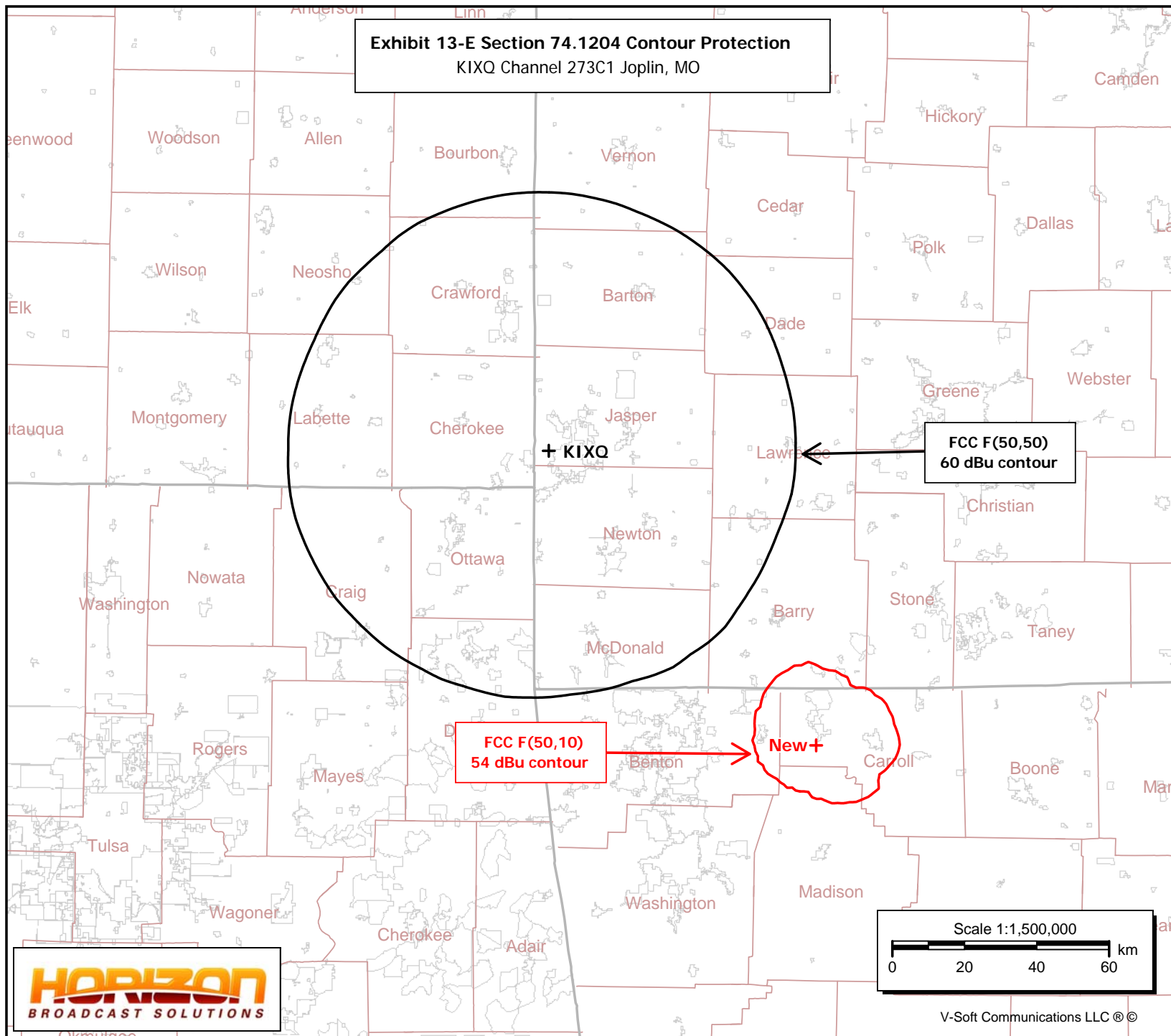
Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	914.2	30.0	11.2	11.5	60.0	33.1	100.1
0.5	100.0	913.3	30.5	9.3	7.9	60.5	32.8	98.4
1.0	99.8	911.3	31.0	7.5	5.1	61.0	32.5	96.7
1.5	99.7	908.1	31.5	5.6	2.9	61.5	32.2	94.8
2.0	99.4	903.9	32.0	3.8	1.3	62.0	31.9	92.8
2.5	99.1	898.4	32.5	2.1	0.4	62.5	31.5	90.8
3.0	98.8	891.9	33.0	0.3	0.0	63.0	31.1	88.7
3.5	98.4	884.3	33.5	1.4	0.2	63.5	30.8	86.5
4.0	97.9	875.7	34.0	3.0	0.8	64.0	30.4	84.2
4.5	97.3	865.9	34.5	4.6	2.0	64.5	29.9	81.9
5.0	96.7	855.2	35.0	6.2	3.5	65.0	29.5	79.5
5.5	96.0	842.7	35.5	7.8	5.5	65.5	29.1	77.2
6.0	95.2	829.2	36.0	9.3	7.9	66.0	28.6	74.8
6.5	94.4	814.9	36.5	10.7	10.5	66.5	28.2	72.5
7.0	93.5	799.7	37.0	12.1	13.5	67.0	27.7	70.0
7.5	92.6	783.6	37.5	13.5	16.7	67.5	27.2	67.6
8.0	91.6	766.9	38.0	14.9	20.2	68.0	26.7	65.1
8.5	90.5	749.4	38.5	16.1	23.8	68.5	26.2	62.7
9.0	89.4	731.2	39.0	17.4	27.7	69.0	25.7	60.2
9.5	88.3	712.5	39.5	18.6	31.6	69.5	25.1	57.8
10.0	87.1	693.1	40.0	19.8	35.7	70.0	24.6	55.3
10.5	85.7	670.8	40.5	20.9	39.8	70.5	24.1	53.3
11.0	84.2	648.2	41.0	21.9	43.9	71.0	23.7	51.2
11.5	82.7	625.3	41.5	22.9	48.1	71.5	23.2	49.2
12.0	81.2	602.3	42.0	23.9	52.2	72.0	22.7	47.2
12.5	79.6	579.0	42.5	24.8	56.4	72.5	22.2	45.2
13.0	78.0	555.7	43.0	25.7	60.4	73.0	21.7	43.2
13.5	76.3	532.4	43.5	26.5	64.4	73.5	21.2	41.3
14.0	74.6	509.1	44.0	27.3	68.3	74.0	20.7	39.3
14.5	72.9	485.8	44.5	28.1	72.1	74.5	20.2	37.4
15.0	71.1	462.7	45.0	28.8	75.8	75.0	19.7	35.5
15.5	69.3	439.1	45.5	29.5	79.3	75.5	19.3	33.9
16.0	67.4	415.8	46.0	30.1	82.7	76.0	18.8	32.4
16.5	65.6	392.9	46.5	30.7	85.9	76.5	18.4	30.8
17.0	63.6	370.3	47.0	31.2	88.9	77.0	17.9	29.3
17.5	61.7	348.1	47.5	31.7	91.8	77.5	17.4	27.8
18.0	59.8	326.5	48.0	32.1	94.4	78.0	17.0	26.4
18.5	57.8	305.3	48.5	32.6	96.9	78.5	16.5	24.9
19.0	55.8	284.7	49.0	32.9	99.2	79.0	16.0	23.5
19.5	53.8	264.7	49.5	33.3	101.2	79.5	15.6	22.1
20.0	51.8	245.3	50.0	33.6	103.1	80.0	15.1	20.8
20.5	49.7	226.1	50.5	33.9	104.8	80.5	14.8	20.0
21.0	47.6	207.5	51.0	34.1	106.3	81.0	14.5	19.3
21.5	45.6	189.8	51.5	34.3	107.6	81.5	14.3	18.6
22.0	43.5	172.8	52.0	34.5	108.7	82.0	14.0	17.8
22.5	41.4	156.7	52.5	34.6	109.6	82.5	13.7	17.1
23.0	39.3	141.3	53.0	34.7	110.3	83.0	13.4	16.4
23.5	37.2	126.8	53.5	34.8	110.8	83.5	13.1	15.7
24.0	35.2	113.0	54.0	34.9	111.1	84.0	12.8	15.0
24.5	33.1	100.1	54.5	34.9	111.2	84.5	12.5	14.4
25.0	31.0	88.1	55.0	34.9	111.1	85.0	12.2	13.7
25.5	29.0	76.8	55.5	34.8	110.7	85.5	12.2	13.6
26.0	26.9	66.3	56.0	34.7	110.2	86.0	12.1	13.4
26.5	24.9	56.7	56.5	34.6	109.4	86.5	12.1	13.3
27.0	22.9	47.9	57.0	34.5	108.5	87.0	12.0	13.2
27.5	20.9	39.9	57.5	34.3	107.5	87.5	11.9	13.0
28.0	18.9	32.7	58.0	34.1	106.3	88.0	11.9	12.9
28.5	17.0	26.3	58.5	33.9	104.9	88.5	11.8	12.8
29.0	15.0	20.6	59.0	33.6	103.5	89.0	11.7	12.6
29.5	13.1	15.7	59.5	33.4	101.8	89.5	11.7	12.5

**New**

Eureka Springs, AR  
Latitude: 36-21-38 N  
Longitude: 093-44-54 W  
ERP: 0.14 kW  
HAAT: 180 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 566.0 m  
Elevation: 500.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

**KIXQ**

Joplin, MO  
BLH20060106ABQ  
Latitude: 37-05-49 N  
Longitude: 094-34-25 W  
ERP: 100.00 kW  
HAAT: 278.0 m  
Channel: 273  
Frequency: 102.5 MHz  
AMSL Height: 562.0 m  
Elevation: 296.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

**Exhibit 13-E Section 74.1204 Contour Protection**  
KIXQ Channel 273C1 Joplin, MO

### New

Eureka Springs, AR  
Latitude: 36-21-38 N  
Longitude: 093-44-54 W  
ERP: 0.14 kW  
HAAT: 180 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 566.0 m  
Elevation: 500.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

### KCJC

Dardanelle, AR  
BLH19951011KD  
Latitude: 35-13-41 N  
Longitude: 093-15-20 W  
ERP: 1.45 kW  
HAAT: 403.0 m  
Channel: 272  
Frequency: 102.3 MHz  
AMSL Height: 563.0 m  
Elevation: 518.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

### Exhibit 13-F Section 74.1204 Contour Protection

KCJC Channel 272C3 Dardanelle, AR

