

Non-Interference Compliance
K220JW, Las Vegas, NV FAC#122267
2/15/2024

This exhibit demonstrates that the proposed facility complies with contour overlap and interference protection provisions in all of the applicable rule sections and that this application for a construction permit is in full compliance with 47 C.F.R. § 74.1204.

Let it be noted that should any actual real world interference occur, the applicant acknowledges that it will promptly suspend operation of this translator in accordance with 47 C.F.R. § 74.1203.

Page 2 of this exhibit is an explanation of the method used to demonstrate compliance with contour overlap and interference provisions based on 47 C.F.R. § 74.1204(d), which states:

[A]n application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.

Page 3 contains a tabulation of the vertical radiation pattern of the proposed antenna and the minimum ground clearance of the interfering contour based on this pattern created by V-soft XField.

Page 4 of this exhibit is an adjacent channel study created by ComStudy 2,2

Note: The Adjacent Channel Study indicates that this proposal does not meet the distance separation requirements for Intermediate Frequency station, KVGS. Since the proposed ERP is less than 100W, applicant is requesting a waiver of this requirement.

Page 5 of this exhibit is a Google Earth aerial photo of the vicinity surrounding the proposed translator's tower site with the plotted zone of predicted interference.

Pages 6 through 9 of this exhibit contains a graph and table of the vertical radiation pattern provided by Bext, the manufacture of the TFC2K-2 antenna.

Compliance with 47 C.F.R. § 74.1204(d)

All authorized second and third adjacent stations with which the proposed translator has contour overlap are tabulated below. Column four show the station's signal level at the proposed translator's tower site, and column five gives the minimum value within the entire standard interfering contour of the proposed translator (100 dBμ for most classes, 94 for class B, 97 for class B1). The minimum second or third adjacent F(50,50) contour within the proposed translator's standard interfering contour was used to calculate the proposed translator's actual "worst-case" interfering contour.

File Number	Call Sign	Contour at Tower (dBμ)
BLH-19960913KB	KOMP	87.1
BLED-20140121NIG	KUNV	84.0
Minimum F(50,50) contour of Adjacent Station within Proposed Translator's Standard Interfering Contour		84.0

FCC 02-244 at Section II.A.5 states that "when demonstrating that 'no actual interference will occur due to . . . other factors,' pursuant to Section 74.1204(d), an applicant may use the undesired-to-desired signal ratio method." The undesired-to-desired ratio for second and third adjacent stations required by § 74.1204(a) is 40 dBμ. Since the minimum protected contour strength within the proposed translator's standard interference contour is **84.0 dBμ**, this makes the proposed translator's worst-case interfering contour **124.0 dBμ**. By the free-space equation, this contour is calculated to extend a maximum of **14.2 m** from the transmit antenna.

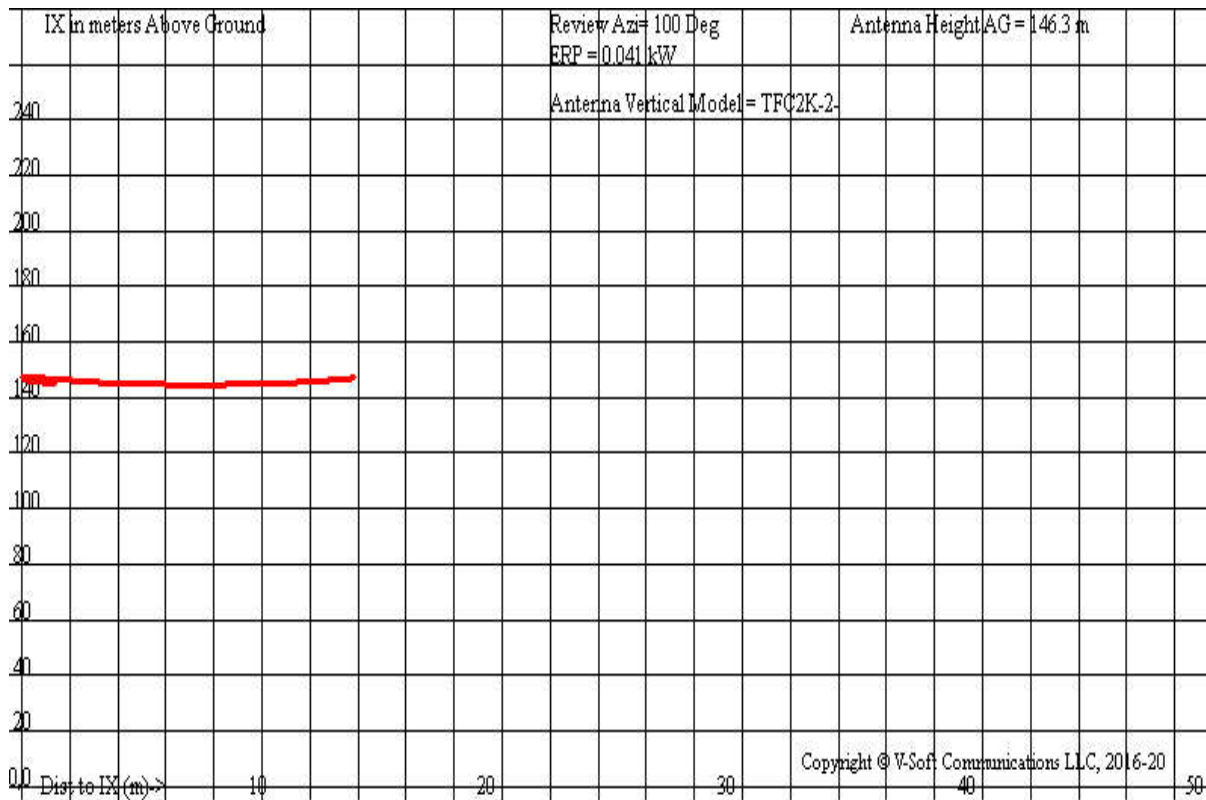
The minimum vertical ground clearance of the proposed translator's interference contour has been calculated using V-Soft, XField. As shown on the following page, the area of interference clears the tower ground level (Height Above Ground) by **143.3m**.

Note: The highest occupied floor in the Rio Hotel is 120m AGL. This proposal has a minimum ground clearance of 143.3m, and thus provides the necessary ground clearance, so in accordance with 47 C.F.R. § 74.1204(d) and the clarification provided by the FCC in the decision *Re: Living Way Ministries* (FCC 02-244), a lack of population has been demonstrated within the area of interference and this application is therefore in full compliance with 47 C.F.R. § 74.1204.

Antenna Manufacturer:	BEX
Antenna Model:	TFC2K-2(.75λ) @ 330°
CORAGL:	146.3 m
Maximum ERP:	.041 kW
Interfering Contour:	124.0 dBμ
Max Int. Contour Distance:	14.2 m
Min Ground Clearance	143.3 m

February 15, 2024

XField (C) 2016-20, V-Soft Communications LLC



K220JW Las Vegas, NV, Showing Protection to KUNV, Channel: 218

Geographic Coordinates: N. 360658 W. 1151111.7

74.1204(d) Study - Using FCC 30 SEC Terrain Database

Translator or LPFM Maximum Antenna ERP = 0.041 kW, Channel: 220

Translator or LPFM Antenna Height AG = 146.3 meters

K220JW Antenna Azimuth Model = TFC2K.PAT, Vertical Model = TFC2K-2-

Protected Station's Contour = 83.98276 dBu

Translator's or LPFM's full Interference contour 123.98276

Review Azimuth = 100 Degrees True

Relative Field on the horizontal at Review Azimuth = 0.250

Translator/LPFM ERP on the horizontal at Review Azimuth = 0.003 kW

Distance between stations = 22.9 km

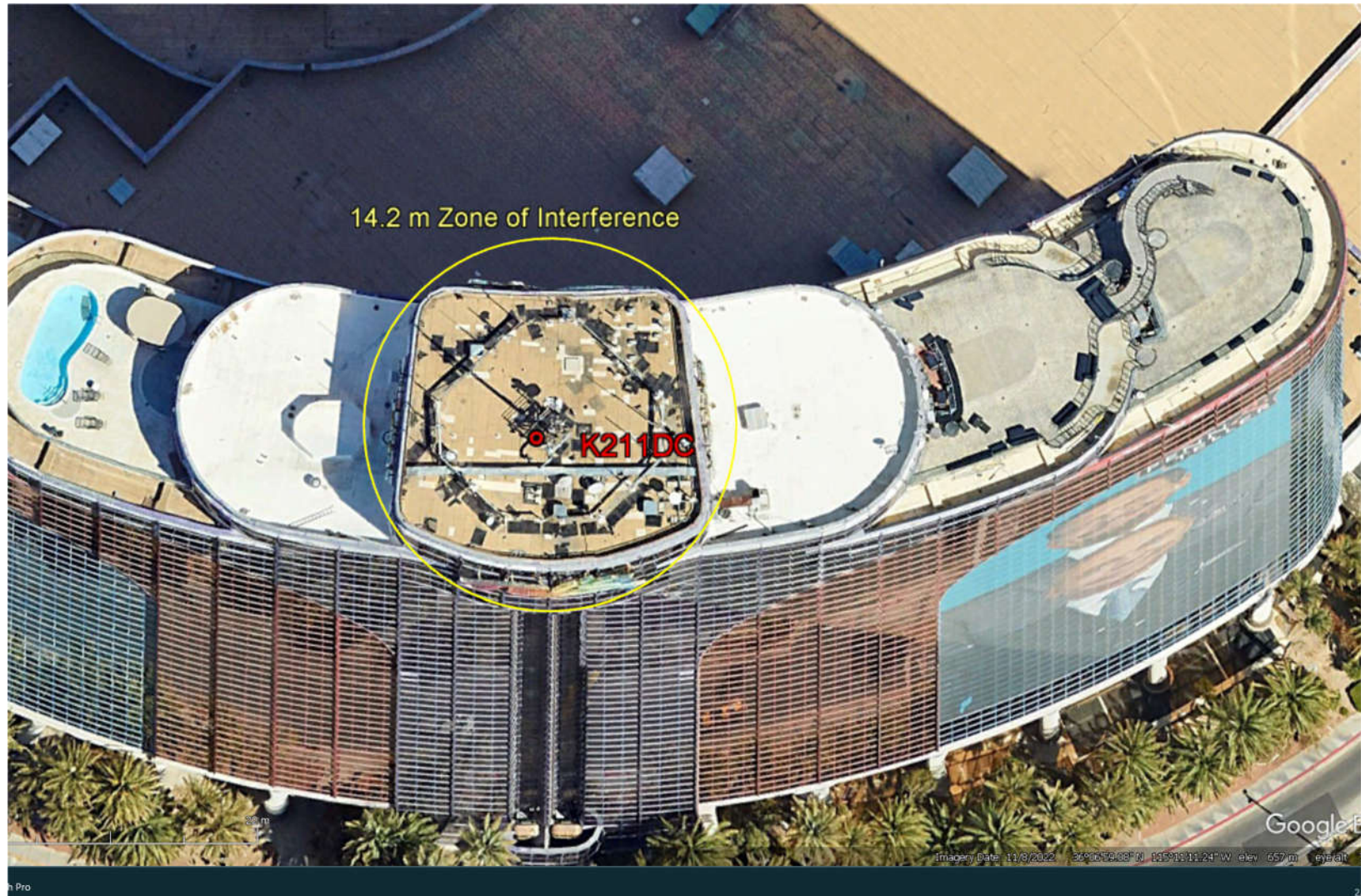
Protected Station= KUNV, 12 kW, 1376 M meters COR AMSL

Depression Angle From Horiz. (Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle (m)	Dist to IX Contour From Tower Base (m)	Height IX Above Ground (m)
00.0	1.0	0.25	0.0103	014.1979	014.1979	146.300
05.0	0.954	0.25	0.0093	013.5448	013.4932	145.119
10.0	0.850	0.25	0.0074	012.0682	011.8849	144.204
15.0	0.728	0.25	0.0054	010.3361	009.9839	143.625
20.0	0.609	0.25	0.0038	008.6465	008.1251	143.343
25.0	0.489	0.25	0.0025	006.9428	006.2923	143.366
30.0	0.351	0.25	0.0013	004.9835	004.3158	143.808
35.0	0.197	0.25	0.0004	002.7970	002.2912	144.696
40.0	0.048	0.25	0.0000	000.6815	000.5221	145.862
45.0	0.071	0.25	0.0001	001.0081	000.7128	145.587
50.0	0.147	0.25	0.0002	002.0871	001.3416	144.701
55.0	0.181	0.25	0.0003	002.5698	001.4740	144.195
60.0	0.185	0.25	0.0004	002.6266	001.3133	144.025
65.0	0.172	0.25	0.0003	002.4420	001.0320	144.087
70.0	0.150	0.25	0.0002	002.1297	000.7284	144.299
75.0	0.122	0.25	0.0002	001.7321	000.4483	144.627
80.0	0.089	0.25	0.0001	001.2636	000.2194	145.056
85.0	0.050	0.25	0.0000	000.7099	000.0619	145.593
90.0	0.050	0.25	0.0000	000.7099	000.0000	145.590

Adjacent Channel Study
K220JW, Las Vegas, NV FAC#122267
2/15/2024

Callsign	State	City	Channel	ERP (W)	Class	Status	Distance (km)	Clr
K220JW	NV	LAS VEGAS	220	10	D	LIC	18.21	-35.35 dB
KOMP	NV	LAS VEGAS	222	25000	C	LIC	32.93	-27.36 dB
KUNV	NV	LAS VEGAS	218	12000	C1	LIC	22.85	-24.29 dB
KOMP	NV	LAS VEGAS	222	5000	C	CP MOD	22.94	-19.94 dB
KOMP	NV	LAS VEGAS	222	1800	C	LIC	22.94	-15.81 dB
KOMP	NV	LAS VEGAS	222	1800	C	LIC	22.94	-15.49 dB
KVGS	NV	BOULDER CITY	274	12500	C	LIC	20.06	-8.9
KVGS	NV	BOULDER CITY	274	99000	C	LIC	22.85	-6.2
KVGS	NV	BOULDER CITY	274	1500	C	LIC	22.85	-6.2
KVIR	AZ	DOLAN SPRINGS	220	30000	C0	LIC	104.25	1.71 dB
KXBN	UT	CEDAR CITY	221	100000	C	LIC	234.35	35.67 dB
NCE-MXG-159-AMT	NV	CRYSTAL	217	12000	C3	CP MOD	100.12	37.86 dB

Aerial Photo Zone of Predicted Interference
K220JW, Las Vegas, NV FAC#122267
December 19, 2023



The zone of predicted interference extends 14.2m from the base of the tower and does not extend over any building other than the Rio Hotel.

Antenna Project

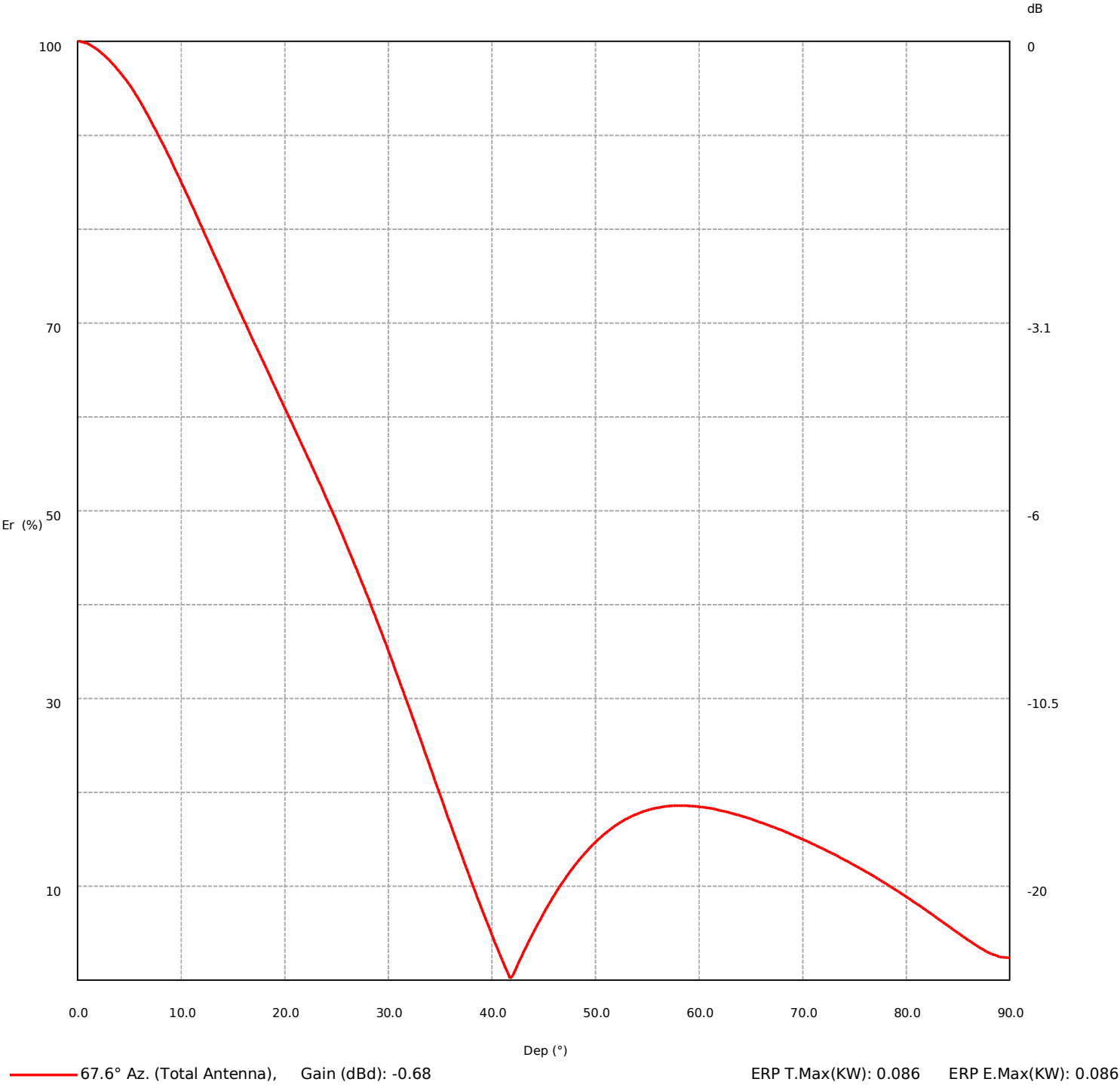
BEXT

Two bay TFC2K
.75 spacing
Frequency: 99.10 MHz

Oct 28, 2022

Frequency: 99.10 MHz

Vertical diagram at an azimuth of 67.6° degrees



Vertical diagram at an azimuth of 67.6° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.1	85.5	15.0	72.8	45.2	30.0	35.1	10.5
0.3	100.0	85.4	15.3	72.2	44.5	30.3	34.3	10.1
0.5	99.9	85.3	15.5	71.6	43.8	30.5	33.6	9.6
0.8	99.8	85.1	15.8	71.0	43.0	30.8	32.8	9.2
1.0	99.7	85.0	16.0	70.4	42.3	31.0	32.0	8.8
1.3	99.6	84.7	16.3	69.8	41.6	31.3	31.3	8.4
1.5	99.4	84.4	16.5	69.2	40.9	31.5	30.5	8.0
1.8	99.2	84.1	16.8	68.6	40.2	31.8	29.8	7.6
2.0	99.0	83.8	17.0	68.0	39.5	32.0	29.0	7.2
2.3	98.8	83.4	17.3	67.4	38.8	32.3	28.2	6.8
2.5	98.6	83.0	17.5	66.8	38.1	32.5	27.5	6.4
2.8	98.3	82.6	17.8	66.3	37.5	32.8	26.7	6.1
3.0	98.1	82.1	18.0	65.7	36.8	33.0	25.9	5.7
3.3	97.8	81.6	18.3	65.1	36.2	33.3	25.1	5.4
3.5	97.4	81.1	18.5	64.5	35.5	33.5	24.4	5.1
3.8	97.1	80.6	18.8	63.9	34.8	33.8	23.6	4.8
4.0	96.8	80.0	19.0	63.3	34.2	34.0	22.8	4.4
4.3	96.5	79.5	19.3	62.7	33.6	34.3	22.0	4.1
4.5	96.1	78.9	19.5	62.1	32.9	34.5	21.2	3.9
4.8	95.8	78.3	19.8	61.5	32.3	34.8	20.5	3.6
5.0	95.4	77.7	20.0	60.9	31.7	35.0	19.7	3.3
5.3	95.0	77.0	20.3	60.3	31.1	35.3	18.9	3.0
5.5	94.5	76.3	20.5	59.8	30.5	35.5	18.1	2.8
5.8	94.1	75.6	20.8	59.2	29.9	35.8	17.3	2.6
6.0	93.6	74.9	21.0	58.6	29.3	36.0	16.6	2.3
6.3	93.2	74.1	21.3	58.0	28.7	36.3	15.8	2.1
6.5	92.7	73.3	21.5	57.4	28.1	36.5	15.0	1.9
6.8	92.2	72.5	21.8	56.8	27.6	36.8	14.3	1.7
7.0	91.6	71.7	22.0	56.2	27.0	37.0	13.5	1.6
7.3	91.1	70.9	22.3	55.6	26.4	37.3	12.8	1.4
7.5	90.6	70.1	22.5	55.0	25.8	37.5	12.0	1.2
7.8	90.1	69.3	22.8	54.4	25.3	37.8	11.3	1.1
8.0	89.5	68.5	23.0	53.8	24.7	38.0	10.5	0.9
8.3	89.0	67.6	23.3	53.2	24.2	38.3	9.8	0.8
8.5	88.4	66.8	23.5	52.6	23.6	38.5	9.0	0.7
8.8	87.9	66.0	23.8	52.0	23.1	38.8	8.3	0.6
9.0	87.3	65.1	24.0	51.3	22.5	39.0	7.6	0.5
9.3	86.7	64.3	24.3	50.7	22.0	39.3	6.9	0.4
9.5	86.2	63.4	24.5	50.1	21.4	39.5	6.2	0.3
9.8	85.6	62.6	24.8	49.5	20.9	39.8	5.5	0.3
10.0	85.0	61.7	25.0	48.9	20.4	40.0	4.8	0.2
10.3	84.4	60.8	25.3	48.2	19.8	40.3	4.1	0.1
10.5	83.8	60.0	25.5	47.6	19.3	40.5	3.4	0.1
10.8	83.2	59.1	25.8	46.9	18.8	40.8	2.8	0.1
11.0	82.6	58.2	26.0	46.2	18.3	41.0	2.1	0.0
11.3	82.0	57.4	26.3	45.6	17.7	41.3	1.5	0.0
11.5	81.4	56.6	26.5	44.9	17.2	41.5	0.8	0.0
11.8	80.8	55.7	26.8	44.2	16.7	41.8	0.2	0.0
12.0	80.2	54.9	27.0	43.6	16.2	42.0	0.4	0.0
12.3	79.5	54.0	27.3	42.9	15.7	42.3	1.1	0.0
12.5	78.9	53.2	27.5	42.2	15.2	42.5	1.7	0.0
12.8	78.3	52.4	27.8	41.5	14.7	42.8	2.3	0.0
13.0	77.7	51.5	28.0	40.8	14.2	43.0	2.8	0.1
13.3	77.1	50.7	28.3	40.1	13.7	43.3	3.4	0.1
13.5	76.5	49.9	28.5	39.4	13.3	43.5	4.0	0.1
13.8	75.9	49.2	28.8	38.7	12.8	43.8	4.5	0.2
14.0	75.3	48.4	29.0	38.0	12.3	44.0	5.1	0.2
14.3	74.6	47.6	29.3	37.3	11.9	44.3	5.6	0.3
14.5	74.0	46.8	29.5	36.5	11.4	44.5	6.1	0.3
14.8	73.4	46.0	29.8	35.8	10.9	44.8	6.6	0.4

Vertical diagram at an azimuth of 67.6° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
45.0	7.1	0.4	60.0	18.5	2.9	75.0	12.2	1.3
45.3	7.6	0.5	60.3	18.4	2.9	75.3	12.1	1.2
45.5	8.1	0.6	60.5	18.4	2.9	75.5	11.9	1.2
45.8	8.6	0.6	60.8	18.4	2.9	75.8	11.8	1.2
46.0	9.0	0.7	61.0	18.3	2.9	76.0	11.6	1.2
46.3	9.5	0.8	61.3	18.3	2.8	76.3	11.5	1.1
46.5	9.9	0.8	61.5	18.2	2.8	76.5	11.3	1.1
46.8	10.3	0.9	61.8	18.1	2.8	76.8	11.1	1.1
47.0	10.7	1.0	62.0	18.1	2.8	77.0	11.0	1.0
47.3	11.1	1.1	62.3	18.0	2.8	77.3	10.8	1.0
47.5	11.5	1.1	62.5	18.0	2.8	77.5	10.6	1.0
47.8	11.9	1.2	62.8	17.9	2.7	77.8	10.5	0.9
48.0	12.2	1.3	63.0	17.8	2.7	78.0	10.3	0.9
48.3	12.6	1.3	63.3	17.7	2.7	78.3	10.1	0.9
48.5	12.9	1.4	63.5	17.7	2.7	78.5	9.9	0.8
48.8	13.2	1.5	63.8	17.6	2.6	78.8	9.8	0.8
49.0	13.5	1.6	64.0	17.5	2.6	79.0	9.6	0.8
49.3	13.9	1.6	64.3	17.4	2.6	79.3	9.4	0.8
49.5	14.1	1.7	64.5	17.3	2.6	79.5	9.2	0.7
49.8	14.4	1.8	64.8	17.2	2.5	79.8	9.1	0.7
50.0	14.7	1.8	65.0	17.2	2.5	80.0	8.9	0.7
50.3	15.0	1.9	65.3	17.1	2.5	80.3	8.7	0.6
50.5	15.2	2.0	65.5	17.0	2.5	80.5	8.5	0.6
50.8	15.4	2.0	65.8	16.9	2.4	80.8	8.3	0.6
51.0	15.7	2.1	66.0	16.8	2.4	81.0	8.1	0.6
51.3	15.9	2.2	66.3	16.7	2.4	81.3	7.9	0.5
51.5	16.1	2.2	66.5	16.6	2.3	81.5	7.8	0.5
51.8	16.3	2.3	66.8	16.5	2.3	81.8	7.6	0.5
52.0	16.5	2.3	67.0	16.4	2.3	82.0	7.4	0.5
52.3	16.7	2.4	67.3	16.3	2.3	82.3	7.2	0.4
52.5	16.9	2.4	67.5	16.2	2.2	82.5	7.0	0.4
52.8	17.0	2.5	67.8	16.1	2.2	82.8	6.8	0.4
53.0	17.2	2.5	68.0	15.9	2.2	83.0	6.6	0.4
53.3	17.3	2.6	68.3	15.8	2.1	83.3	6.4	0.3
53.5	17.5	2.6	68.5	15.7	2.1	83.5	6.2	0.3
53.8	17.6	2.6	68.8	15.6	2.1	83.8	6.0	0.3
54.0	17.7	2.7	69.0	15.5	2.0	84.0	5.8	0.3
54.3	17.8	2.7	69.3	15.4	2.0	84.3	5.6	0.3
54.5	17.9	2.7	69.5	15.2	2.0	84.5	5.4	0.2
54.8	18.0	2.8	69.8	15.1	1.9	84.8	5.2	0.2
55.0	18.1	2.8	70.0	15.0	1.9	85.0	5.0	0.2
55.3	18.2	2.8	70.3	14.9	1.9	85.3	4.8	0.2
55.5	18.2	2.8	70.5	14.7	1.9	85.5	4.6	0.2
55.8	18.3	2.9	70.8	14.6	1.8	85.8	4.4	0.2
56.0	18.4	2.9	71.0	14.5	1.8	86.0	4.2	0.2
56.3	18.4	2.9	71.3	14.4	1.8	86.3	4.1	0.1
56.5	18.5	2.9	71.5	14.2	1.7	86.5	3.9	0.1
56.8	18.5	2.9	71.8	14.1	1.7	86.8	3.7	0.1
57.0	18.5	2.9	72.0	14.0	1.7	87.0	3.5	0.1
57.3	18.5	2.9	72.3	13.8	1.6	87.3	3.4	0.1
57.5	18.6	2.9	72.5	13.7	1.6	87.5	3.2	0.1
57.8	18.6	2.9	72.8	13.5	1.6	87.8	3.0	0.1
58.0	18.6	2.9	73.0	13.4	1.5	88.0	2.9	0.1
58.3	18.6	2.9	73.3	13.3	1.5	88.3	2.8	0.1
58.5	18.6	2.9	73.5	13.1	1.5	88.5	2.7	0.1
58.8	18.6	2.9	73.8	13.0	1.4	88.8	2.6	0.1
59.0	18.6	2.9	74.0	12.8	1.4	89.0	2.5	0.1
59.3	18.5	2.9	74.3	12.7	1.4	89.3	2.4	0.1
59.5	18.5	2.9	74.5	12.5	1.3	89.5	2.4	0.0
59.8	18.5	2.9	74.8	12.4	1.3	89.8	2.4	0.0