

**W232CP  
APPLICATION FOR  
MINOR MODIFICATIONS**

This application seeks a change in site to serve as a fill-in for WNOW-FM (ID #6420). It is noted that the W232CP construction permit has been built and a form 350 filed - BLFT-20150326AAG.

**Allocation discussion:**

All exhibits utilize the V-Soft provided NGDC 30 second terrain database.

E1	Channel study
E1AA	WREB plot and FMOVER
E1A	Interference analysis to WRWM
E1B	Interference analysis to WFBQ
E1C	Aerial view of interference area
E1D	DA
E2	60 dBu contours plot
E3	ASR

A channel study is included as E1 and an interference plot as E1AA showing clearance to WREB demonstrating compliance with §74.1204. Analysis of 2nd adjacent channel WRWM and WFBQ are provided below. A plot of the proposed 60 dBu is provided as E2 showing that it is entirely contained within the WNOW-FM 60 dBu and overlaps the constructed W232CP 60 dBu.

**WRWM and WFBQ analyses:**

The proposed W232CP facility will be located inside the protected contour of 2nd adjacent channel stations WRWM on channel 230BI and WFBQ on 234B. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The WRWM (50,50) contour at the proposed site is 85.35 dBu and the (50,10) interference contour is 125.35 dBu. Exhibit E1CA demonstrates that this interfering contour is at least 111.6 meters above ground. An examination of the aerial photographs from Google Earth provided as E1E shows that there are no structures taller than two stories or any major highways within the interference contours.

The WFBQ contour at the proposed site is 89.47 dBu and the (50,10) interference contour is 129.47 dBu. Exhibit E1D demonstrates that this interfering contour is at least 120.84 meters above ground.

Clearly, these interference contours will not reach any populated area or major highways as is evident from the aerial photograph of the site included as E1C. Based on this showing a waiver of Section 74.1204 is requested in accordance with *Living Way Ministries, Inc.* (FCC 08-242).

**RF Exposure Calculation:**

The proposed facility will be located at an existing tower (ASR #1027512) using a single bay PSI FML-1 circularly polarized antenna. The RF contribution of the proposed translator was calculated to be 0.93  $\mu\text{Watts}/\text{cm}^2$  using the formula included below and a worst case vertical factor of 1.0. This is 0.47% of the maximum permissible 200 microwatts/cm<sup>2</sup> exposure for general population/uncontrolled exposure, and well below 5% of that limit which requires consideration.

$$S \text{ (RF in } \mu\text{Watts}/\text{cm}^2) = \frac{33.4 (F^2 \text{ Vertical Factor}) \times (H \text{ ERP} + V \text{ ERP in Watts})}{R^2 \text{ (distance to radiation center in meters} - 2 \text{ m)}}$$

The proposed translator facility complies with Commission RF radiation limits.



Charles M. Anderson  
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270-782-0246

# E1 CHANNEL STUDY

REFERENCE  
39 48 01.0 N.  
86 04 39.0 W.

CH# 232D - 94.3 MHz, Pwr= 0.25 kW DA, HAAT= 147.5 M, COR= 388 M  
Average Protected F(50-50)= 15.74 km  
Standard Directional

DISPLAY DATES  
DATA 03-13-15  
SEARCH 03-13-15

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
234B Indianapolis	WFBQ	LIC _CN IN	315.1 135.0	14.93 BLH19980707KB	39 53 43.0 86 12 04.0	58.000 245	8.2 502	77.7 Capstar Tx Llc	-9.1*	-64.6* (1)
232D Noblesville	<del>W232CP</del>	CP DC_ IN	16.7 196.7	24.38 BMPFT20140902AEG	40 00 38.0 85 59 43.0	0.250	34.2 299	7.6 Kaspar Broadcasting Co, In	-24.2*	-36.0*
230B1 Lawrence	WRWM	LIC NCX IN	69.8 249.9	8.81 BLH20120301AEG	39 49 39.0 85 58 51.0	8.400 140	3.5 393	42.0 Radio License Holding Src	-3.3	-33.7* (2)
232A Rushville	WIFE-FM	LIC _C_ IN	101.7 282.1	51.02 BMLH20000913AAR	39 42 22.0 85 29 41.0	1.050 171	74.6 462	25.2 Rodgers Broadcasting Corp.	-30.9*	3.0
232A Greencastle	WREB	LIC _HN IN	257.7 77.2	71.59 BLH3278	39 39 38.0 86 53 34.0	3.000 49	63.7 285	15.7 The Original Company, Inc	-8.0	0.7
231D Martinsville	W231BT	LIC DC_ IN	219.7 39.5	52.23 BLFT20110209ADD	39 26 18.0 86 27 58.0	0.215 88	16.3 305	11.2 Mid-america Radio Group, I	19.0	15.8
232D Lafayette	649013	APP _C_ IN	314.7 134.1	93.77 BNPFT20030317GVI	40 23 24.0 86 51 53.0	0.250 77	35.2 276	10.4 Kaspar Broadcasting Co, In	42.7	31.4
232L1 Marion	WIWU-LP	LIC ____ IN	23.4 203.7	87.33 BLL20071001AJP	40 31 15.0 85 39 59.0	0.100 25	281	53.5 Indiana Wesleyan Universit		31.9
231D Frankfort	W231CB	LIC _C_ IN	325.7 145.4	67.79 BLFT20091125ADH	40 18 12.0 86 31 40.0	0.250 73	14.0 327	10.1 Kaspar Broadcasting Co., I	37.8	33.7
232D Lafayette	643890	APP _C_ IN	315.1 134.6	97.56 BNPFT20030317AMN	40 25 06.0 86 53 27.0	0.250 -14	23.8 182	7.1 Confiteor, Inc.	57.9	38.7
231L1 Kokomo	NEW	CP ____ IN	356.9 176.9	76.17 BNPL20131114BNX	40 29 07.0 86 07 34.1	0.100 15	266	52.3 The Trustees Of Indiana Un		46.7

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

(1) See E1B for disproval of interference.

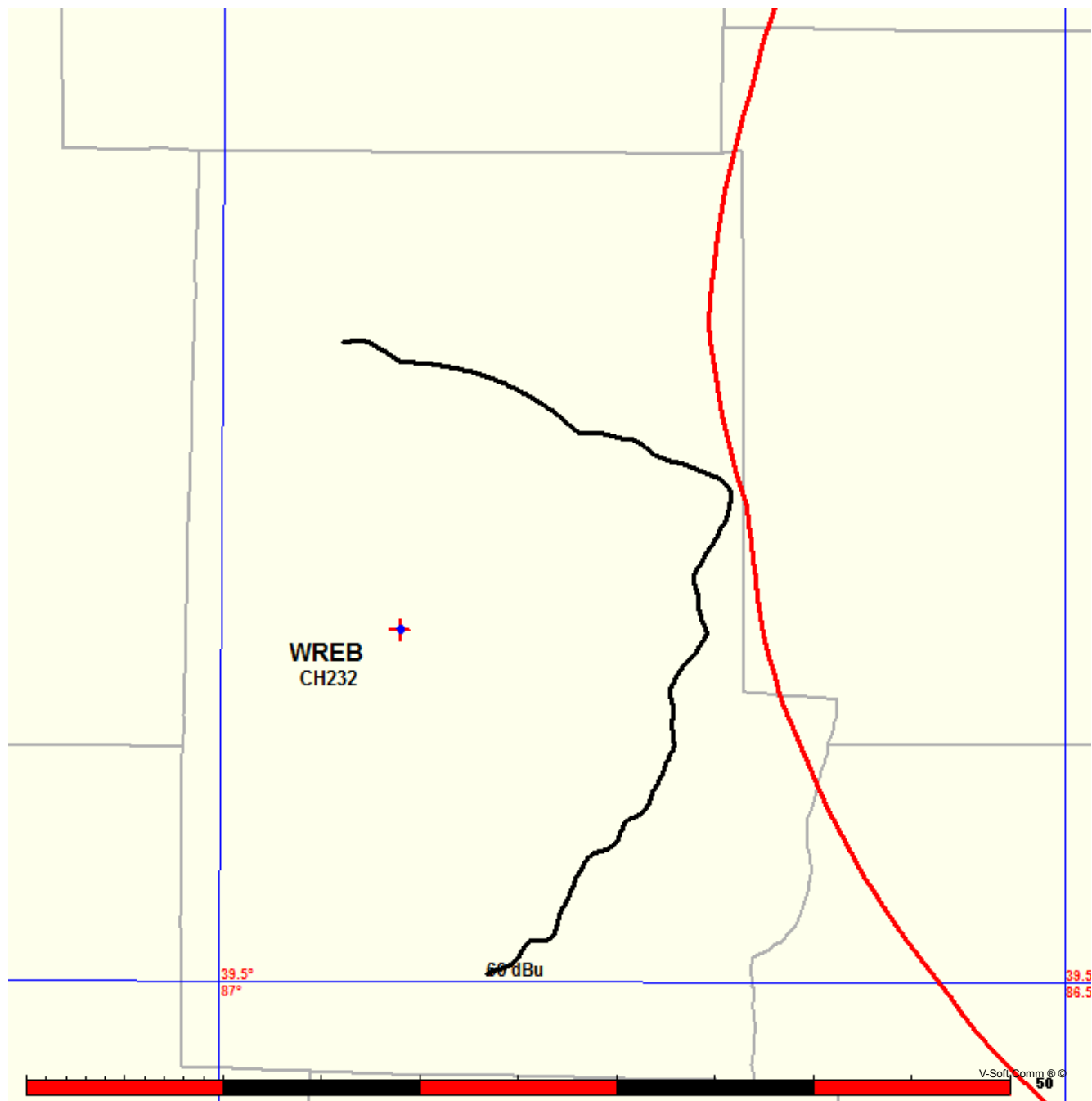
(2) See E1A for disproval of interference.

## E1AA CHANNEL STUDY

FMCommander Single Allocation Study - 03-13-2015 - NGDC 30 SEC  
W232CP's Overlaps (In= -7.98 km, Out= 0.69 km)

W232CP CH 232 D DA  
Lat= 39 48 01.0, Lng= 86 04 39.0  
0.25 kW 147.5 M HAAT, 388 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

WREB CH 232 A BLH3278  
Lat= 39 39 38.0, Lng= 86 53 34.0  
3.0 kW 49 M HAAT, 285 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



# E1AA FMOVER

03-13-2015 Terrain Data: NGDC 30 SEC FMOver Analysis

WREB BLH3278

Channel = 232A  
Max ERP = 3 kW  
RCAMSL = 285 M  
N. Lat. 39 39 38.0  
W. Lng. 86 53 34.0  
Protected  
60 dBu

W232CP

Channel = 232D  
Max ERP = 0.25 kW  
RCAMSL = 388 M  
N. Lat. 39 48 01.0  
W. Lng. 86 04 39.0  
Interfering  
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
055.0	003.0000	0041.0	015.3	263.5	000.2371	0167.6	057.7	38.44	
056.0	003.0000	0041.5	015.4	263.3	000.2367	0167.6	057.4	38.51	
057.0	003.0000	0042.4	015.6	263.1	000.2364	0167.5	057.2	38.61	
058.0	003.0000	0043.5	015.9	263.0	000.2361	0167.5	056.8	38.73	
059.0	003.0000	0044.8	016.1	262.8	000.2359	0167.5	056.5	38.85	
060.0	003.0000	0046.0	016.4	262.7	000.2355	0167.4	056.1	38.98	
061.0	003.0000	0047.2	016.7	262.5	000.2352	0167.4	055.8	39.10	
062.0	003.0000	0048.4	016.9	262.3	000.2348	0167.3	055.4	39.22	
063.0	003.0000	0049.6	017.1	262.1	000.2344	0167.2	055.1	39.33	
064.0	003.0000	0050.9	017.4	261.9	000.2340	0167.2	054.8	39.45	
065.0	003.0000	0052.4	017.7	261.6	000.2336	0167.1	054.4	39.58	
066.0	003.0000	0053.6	017.9	261.4	000.2331	0167.0	054.1	39.68	
067.0	003.0000	0054.2	018.0	261.1	000.2325	0167.0	053.9	39.74	
068.0	003.0000	0054.0	018.0	260.8	000.2319	0166.9	053.9	39.73	
069.0	003.0000	0053.1	017.8	260.4	000.2312	0166.8	054.0	39.68	
070.0	003.0000	0052.2	017.6	260.0	000.2305	0166.7	054.1	39.62	
071.0	003.0000	0051.0	017.4	259.7	000.2310	0166.6	054.3	39.56	
072.0	003.0000	0049.8	017.2	259.3	000.2317	0166.5	054.5	39.49	
073.0	003.0000	0048.4	016.9	259.0	000.2323	0166.4	054.7	39.40	
074.0	003.0000	0047.0	016.6	258.7	000.2330	0166.3	055.0	39.31	
075.0	003.0000	0045.6	016.3	258.3	000.2336	0166.3	055.3	39.21	
076.0	003.0000	0044.4	016.0	258.0	000.2342	0166.2	055.5	39.12	
077.0	003.0000	0043.0	015.8	257.7	000.2347	0166.2	055.8	39.02	
078.0	003.0000	0041.7	015.5	257.5	000.2353	0166.1	056.1	38.92	
079.0	003.0000	0040.6	015.2	257.2	000.2358	0166.1	056.3	38.84	
080.0	003.0000	0039.6	015.1	256.9	000.2363	0166.1	056.5	38.78	
081.0	003.0000	0039.4	015.0	256.7	000.2368	0166.2	056.6	38.76	
082.0	003.0000	0039.6	015.0	256.4	000.2373	0166.2	056.6	38.78	
083.0	003.0000	0039.7	015.1	256.1	000.2379	0166.3	056.6	38.79	
084.0	003.0000	0039.7	015.1	255.9	000.2384	0166.3	056.6	38.79	
085.0	003.0000	0039.6	015.1	255.6	000.2389	0166.4	056.7	38.78	
086.0	003.0000	0039.7	015.1	255.4	000.2394	0166.5	056.7	38.78	
087.0	003.0000	0039.9	015.1	255.1	000.2399	0166.6	056.7	38.79	
088.0	003.0000	0040.3	015.2	254.8	000.2405	0166.7	056.7	38.81	
089.0	003.0000	0040.8	015.3	254.5	000.2410	0166.8	056.7	38.84	
090.0	003.0000	0041.2	015.4	254.2	000.2416	0166.9	056.7	38.86	
091.0	003.0000	0041.6	015.5	254.0	000.2422	0167.0	056.7	38.87	
092.0	003.0000	0041.1	015.3	253.7	000.2426	0167.0	056.9	38.81	
093.0	003.0000	0040.4	015.2	253.5	000.2430	0167.0	057.1	38.74	
094.0	003.0000	0039.7	015.1	253.3	000.2434	0167.0	057.3	38.66	
095.0	003.0000	0039.1	014.9	253.1	000.2438	0167.1	057.5	38.59	
096.0	003.0000	0038.2	014.8	253.0	000.2441	0167.1	057.8	38.50	

# E1A

W232CP

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 136 Meters

W232CP Antenna Model = PSI FML-1DA

Protected Station's Contour = 85.34721 dBu

Translator's or LPFM's full Interference contour 125.34721

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kW

Distance between stations = 8.8 km

Protected Station= WRWM, 8.4 kW, 393 M Meters COR AMSL

Depression Angle From Horizon(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)
00.00	1.0	1.0	0.2500	059.9252	059.9252	136.000
05.00	0.993	1.0	0.2465	059.5057	059.2793	130.814
10.00	0.974	1.0	0.2372	058.3671	057.4804	125.865
15.00	0.941	1.0	0.2214	056.3896	054.4682	121.405
20.00	0.897	1.0	0.2012	053.7529	050.5112	117.615
25.00	0.843	1.0	0.1777	050.5169	045.7839	114.651
30.00	0.78	1.0	0.1521	046.7417	040.4795	112.629
35.00	0.709	1.0	0.1257	042.4870	034.8033	111.630
40.00	0.633	1.0	0.1002	037.9327	029.0581	111.617
45.00	0.554	1.0	0.0767	033.1986	023.4749	112.525
50.00	0.473	1.0	0.0559	028.3446	018.2196	114.287
55.00	0.394	1.0	0.0388	023.6105	013.5424	116.659
60.00	0.317	1.0	0.0251	018.9963	009.4981	119.549
65.00	0.245	1.0	0.0150	014.6817	006.2047	122.694
70.00	0.181	1.0	0.0082	010.8465	003.7097	125.808
75.00	0.124	1.0	0.0038	007.4307	001.9232	128.822
80.00	0.077	1.0	0.0015	004.6142	000.8013	131.456
85.00	0.041	1.0	0.0004	002.4569	000.2141	133.552
90.00	0.016	1.0	0.0001	000.9588	000.0000	135.041

# E1B

W232CP

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 136 Meters

W232CP Antenna Model = FML-1DA

Protected Station's Contour = 89.47438 dBu

Translator's or LPFM's full Interference contour 129.47438

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

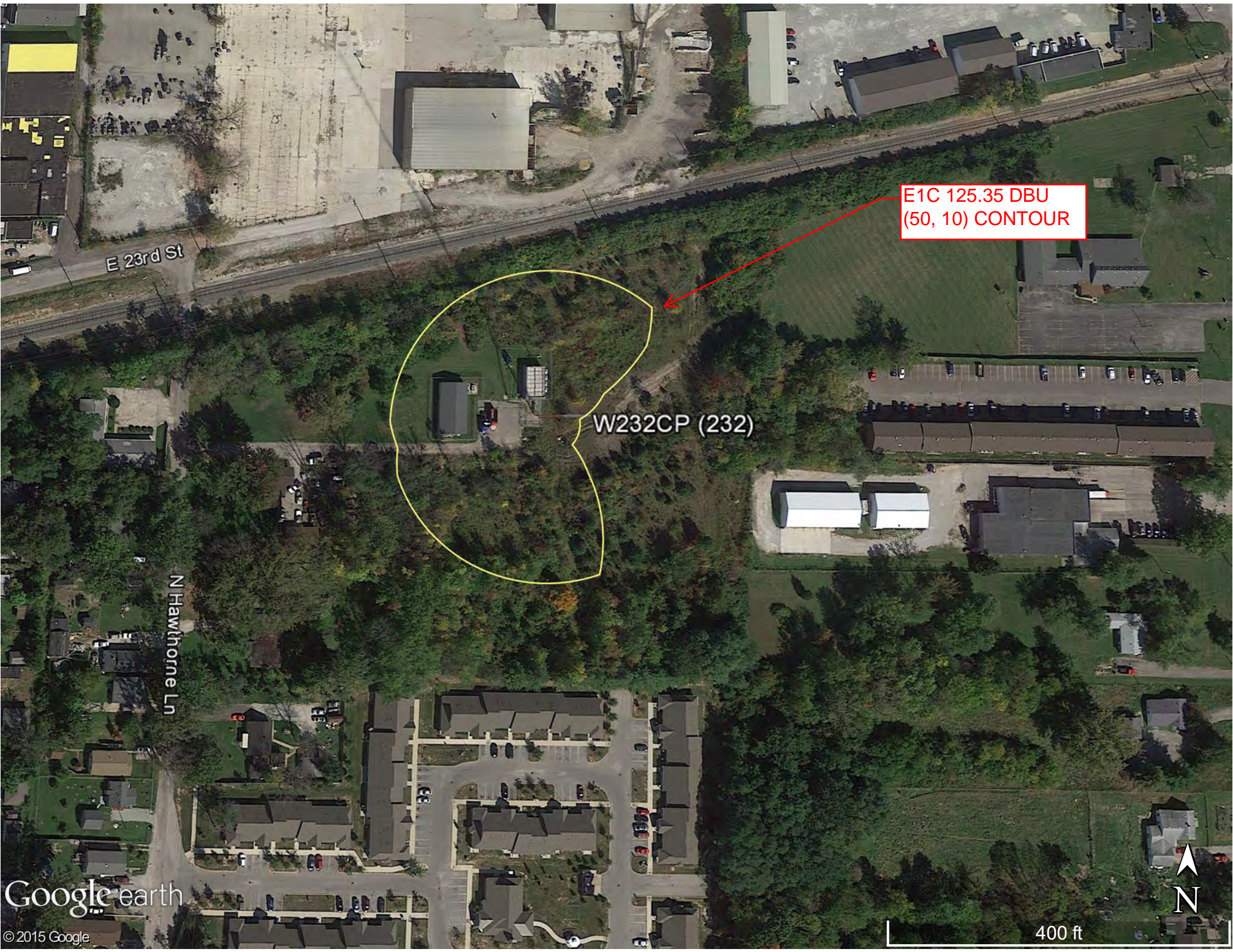
Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kW

Distance between stations = 14.9 km

Protected Station= WFBQ, 58 kW, 502 M Meters COR AMSL

Depression Angle From Horizon(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)
00.00	1.0	1.0	0.2500	037.2607	037.2607	136.000
05.00	0.993	1.0	0.2465	036.9999	036.8591	132.775
10.00	0.974	1.0	0.2372	036.2919	035.7406	129.698
15.00	0.941	1.0	0.2214	035.0623	033.8676	126.925
20.00	0.897	1.0	0.2012	033.4228	031.4072	124.569
25.00	0.843	1.0	0.1777	031.4108	028.4678	122.725
30.00	0.78	1.0	0.1521	029.0633	025.1696	121.468
35.00	0.709	1.0	0.1257	026.4178	021.6402	120.847
40.00	0.633	1.0	0.1002	023.5860	018.0679	120.839
45.00	0.554	1.0	0.0767	020.6424	014.5964	121.404
50.00	0.473	1.0	0.0559	017.6243	011.3287	122.499
55.00	0.394	1.0	0.0388	014.6807	008.4205	123.974
60.00	0.317	1.0	0.0251	011.8116	005.9058	125.771
65.00	0.245	1.0	0.0150	009.1289	003.8580	127.726
70.00	0.181	1.0	0.0082	006.7442	002.3066	129.663
75.00	0.124	1.0	0.0038	004.6203	001.1958	131.537
80.00	0.077	1.0	0.0015	002.8691	000.4982	133.175
85.00	0.041	1.0	0.0004	001.5277	000.1331	134.478
90.00	0.016	1.0	0.0001	000.5962	000.0000	135.404





E1C 125.35 DBU  
(50, 10) CONTOUR

W232CP (232)

E 23rd St

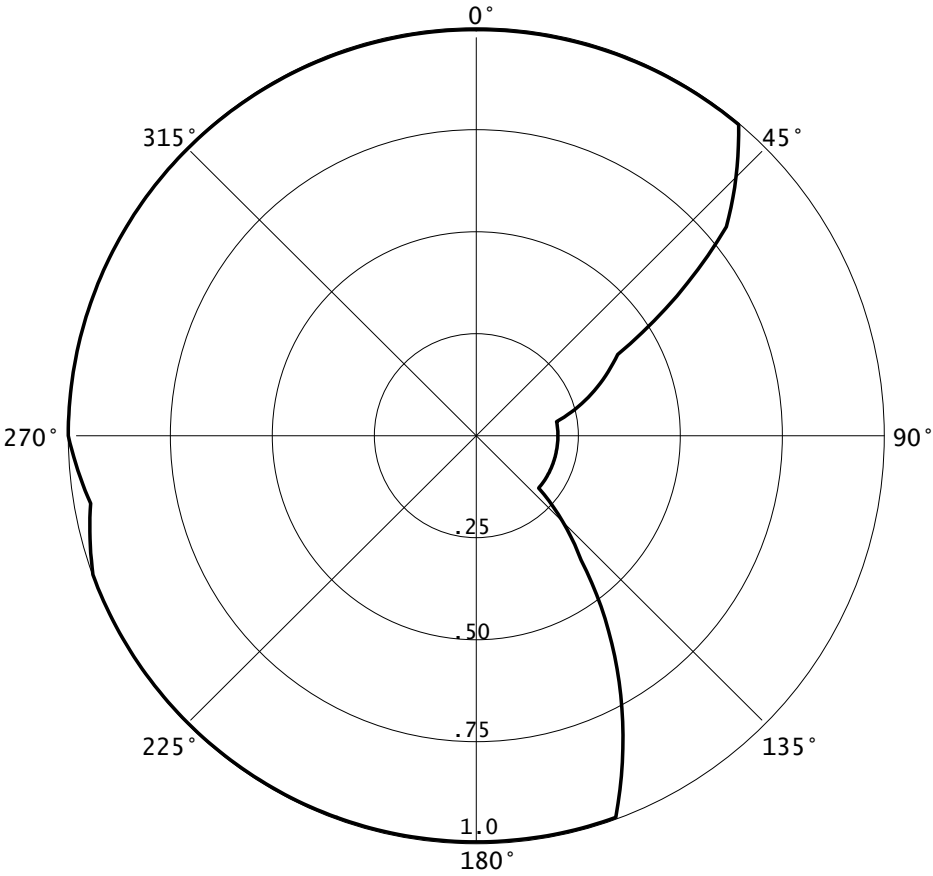
N Hawthorne Ln





Graph is Relative Field

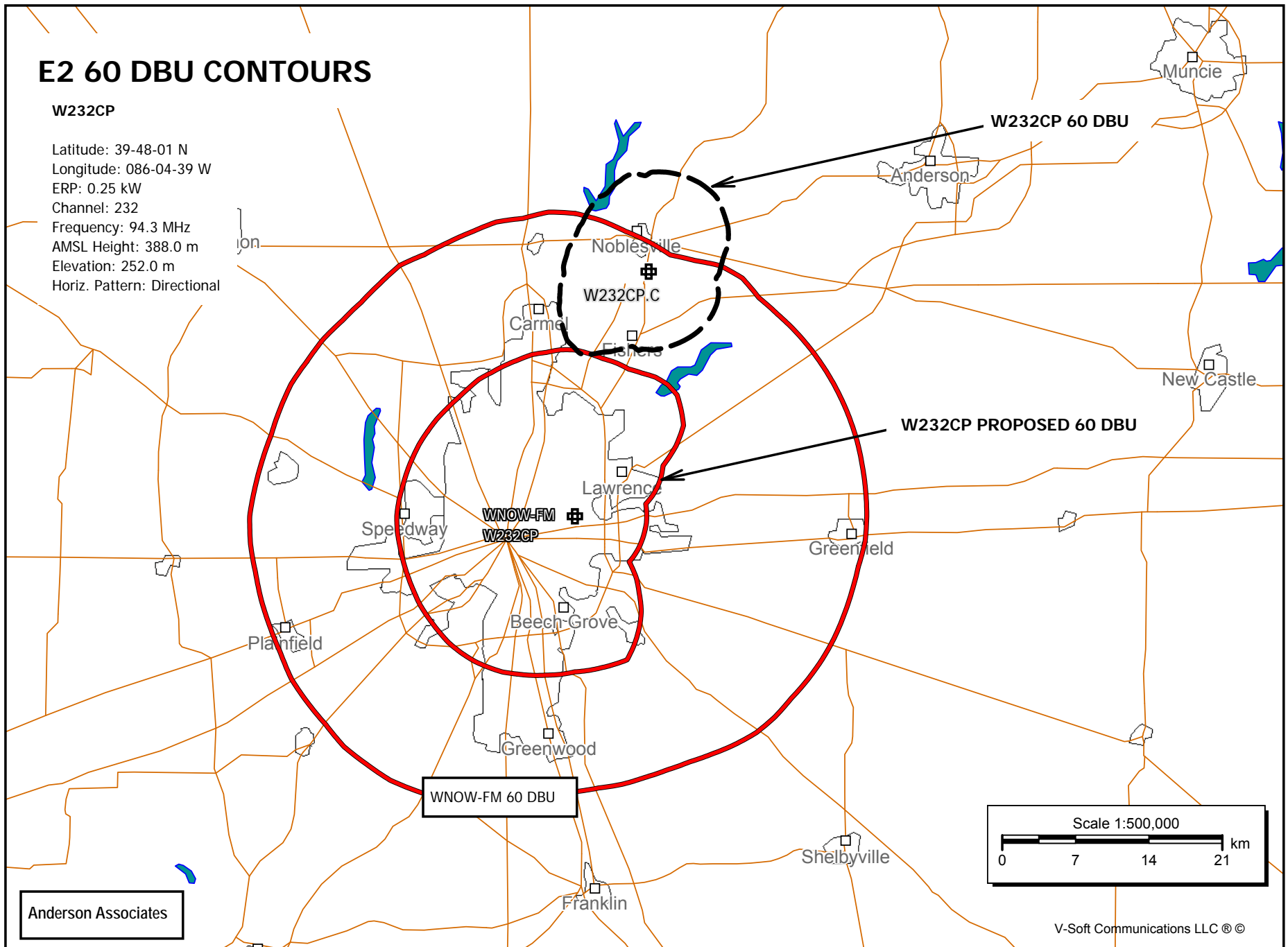
Azi	Field	dBk	kw
000	1.000	-06.021	0.250
010	1.000	-06.021	0.250
020	1.000	-06.021	0.250
030	1.000	-06.021	0.250
040	1.000	-06.021	0.250
050	0.800	-07.959	0.160
060	0.400	-13.979	0.040
070	0.300	-16.478	0.023
080	0.200	-20.000	0.010
090	0.200	-20.000	0.010
100	0.200	-20.000	0.010
110	0.200	-20.000	0.010
120	0.200	-20.000	0.010
130	0.200	-20.000	0.010
140	0.400	-13.979	0.040
150	0.700	-09.119	0.122
160	1.000	-06.021	0.250
170	1.000	-06.021	0.250
180	1.000	-06.021	0.250
190	1.000	-06.021	0.250
200	1.000	-06.021	0.250
210	1.000	-06.021	0.250
220	1.000	-06.021	0.250
230	1.000	-06.021	0.250
240	1.000	-06.021	0.250
250	1.000	-06.021	0.250
260	0.960	-06.375	0.230
270	1.000	-06.021	0.250
280	1.000	-06.021	0.250
290	1.000	-06.021	0.250
300	1.000	-06.021	0.250
310	1.000	-06.021	0.250
320	1.000	-06.021	0.250
330	1.000	-06.021	0.250
340	1.000	-06.021	0.250
350	1.000	-06.021	0.250



# E2 60 DBU CONTOURS

## W232CP

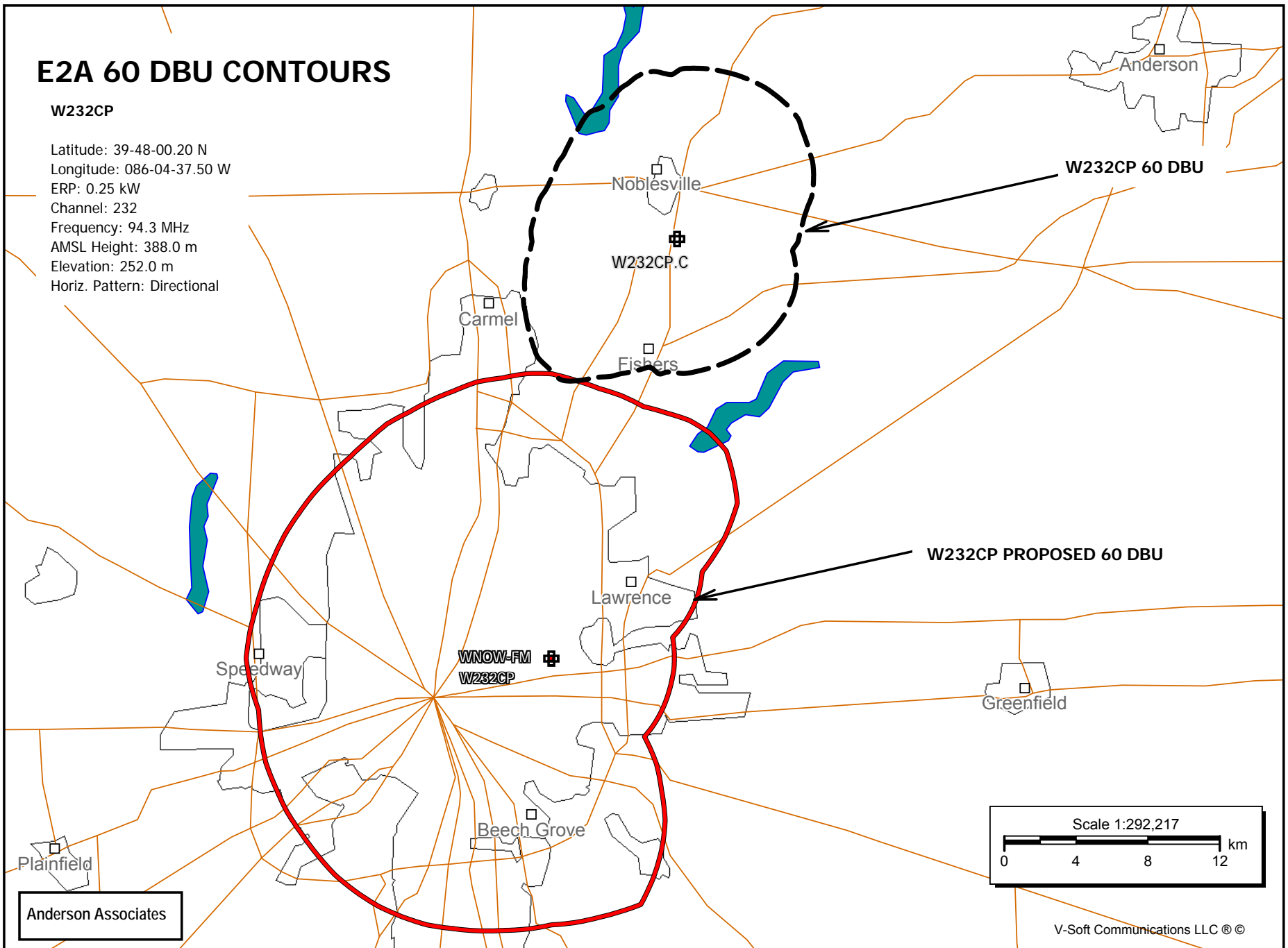
Latitude: 39-48-01 N  
Longitude: 086-04-39 W  
ERP: 0.25 kW  
Channel: 232  
Frequency: 94.3 MHz  
AMSL Height: 388.0 m  
Elevation: 252.0 m  
Horiz. Pattern: Directional



# E2A 60 DBU CONTOURS

## W232CP

Latitude: 39-48-00.20 N  
Longitude: 086-04-37.50 W  
ERP: 0.25 kW  
Channel: 232  
Frequency: 94.3 MHz  
AMSL Height: 388.0 m  
Elevation: 252.0 m  
Horiz. Pattern: Directional



# E3 Registration 1027512

 [Map Registration](#)

## Registration Detail

Reg Number	1027512	Status	Constructed
File Number	A0434495	Constructed	10/09/2002
EMI	No	Dismantled	
NEPA	No		

## Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

### Location (in NAD83 Coordinates)

Lat/Long	39-48-01.0 N 086-04-39.0 W	Address	2255 N HAWTHORNE LN
City, State	INDIANAPOLIS , IN		
Zip	46218	County	MARION
Center of AM Array		Position of Tower in Array	

### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
251.5	159.5
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
411.0	158.5

## Painting and Lighting Specifications

FAA Chapters 4, 8, 12

Paint and Light in Accordance with FAA Circular Number 70/7460-1K

## FAA Notification

FAA Study	2002-AGL-2370-OE	FAA Issue Date	05/09/2002
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## Owner & Contact Information

FRN	0003257649	Owner Entity Type	
Assignor FRN	0002143881	Assignor ID	L00133238

### Owner

Radio Indianapolis Inc.  
Attention To: Craig Bremer  
140 East Market St.  
York , PA 17401

P: (717)852-2305  
F:  
E: craig.bremer@suspzfz.com

### Contact

Philips , Norman J  
221 West Philadelphia St.  
York , PA 17405-1069

P: (717)852-2132  
F:  
E: nphilips@dfwradio.com

## Last Action Status

Status	Constructed	Received	03/17/2005
Purpose	Change Owner	Entered	03/17/2005
Mode	Interactive		

## Related Applications

03/17/2005	A0434495	- Change Owner (OC)
12/30/2004	A0420580	- Change Owner (OC)



## Output from NADCON for station W232CP

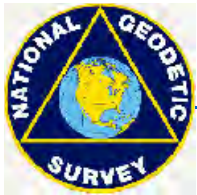
# North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

Transformation #: 1      Region: Conus

	Latitude	Longitude
NAD 27 datum values:	39 48 0.84914	86 04 39.05524
NAD 83 datum values:	39 48 1.00000	86 04 39.00000
NAD 27 - NAD 83 shift values:	-0.15086	0.05523(secs.)
	-4.653	1.314 (meters)
Magnitude of total shift:		4.835(meters)



**NGS HOME PAGE**