

**BNPFT-20130830ABR  
AMENDMENT**

These minor amendments to the BNPFT-20130830ABR long form application include site, HAAT and primary station. The proposed facility will serve as a fill-in translator for station WAYI at Sellersburg, In (FCC facility # 58380). It is noted that the proposed 60 dBu overlaps the original short form 60 dBu.

**Allocation discussion:**

All exhibits utilize the USGS 3 second terrain database.

- E1 Channel study
- E1A Proposed vs. NEW 261A CP
- E1B Proposed vs. WDJX and WLGX
- E1C Aerial view of interference area
- E1D DA tabulation and vertical elevation pattern
- E2 60 dBu contours
- E3 ASR-NADCON conversion

A channel study is included as E1 and interference plots as E1A and E1B demonstrating compliance with §74.1204 with the exception of 2nd adjacent channel stations WLGX on 263C2 and WDJX on 259B which are analyzed below. A plot of the proposed 60 dBu is provided as E2 showing that it is entirely contained within the WAYI 60 dBu, and that it overlaps the original short form application's 60 dBu.

**WLGX and WDJX analysis:**

The proposed 261D facility will be located inside the protected contours of WLGX on 263C2 and WDJX on 259B. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The WLGX (50:50) contour at the proposed site is 79.83 dBu and resulting 261D (50:10) interference contour is 119.83 dBu (see E1B). The WDJX (50:50) contour at the site is 73.65 dBu with an interference contour of 113.65 dBu at a distance of 230.4 meters. That yields a depression angle of 14.6 degrees reducing the ERP to 0.162 kW and the interference contour to 185.5 meters based on the PSI FML-2 0.75 wavelength spaced antenna's F factor of 0.802. Exhibit E1B and E1C (aerial photograph) demonstrate that the reduced ERP interference contour does not reach any populated area or major highway. However, in an abundance of caution, the lower interference contour of the two has been further

## Anderson Associates

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evaluated from 14.6 degrees through 90 degrees using the vertical elevation pattern to determine the vertical clearance from the contour to ground.

| <b>Depression<br/>Angle (Deg.)</b> | <b>F</b> | <b>ERP X F<sup>2</sup><br/>kW</b> | <b>Int. = 113.65 dBu<br/>meters</b> | <b>Vertical Clearance AGL (m)<br/>(Int X sin Ang – 60 m)</b> |
|------------------------------------|----------|-----------------------------------|-------------------------------------|--|
| 14.6                               | 0.802    | 0.162                             | 185.5                               | 13.2   |
| 20                                 | 0.650    | 0.106                             | 150.0                               | 8.7  |
| 25                                 | 0.493    | 0.061                             | 113.8                               | 11.9   |
| 30                                 | 0.331    | 0.027                             | 75.7                                | 22.2   |
| 35                                 | 0.178    | 0.008                             | 41.2                                | 36.4   |
| 40                                 | 0.043    | 0.0005                            | 10.3                                | 53.4   |
| 50                                 | 0.149    | 0.0056                            | 34.5                                | 33.6   |
| 60                                 | 0.227    | 0.013                             | 52.5                                | 14.5   |
| 70                                 | 0.205    | 0.0105                            | 47.2                                | 15.7   |
| 80                                 | 0.118    | 0.0035                            | 27.3                                | 26.9   |
| 90                                 | 0.001    | 0.0000                            | 00.0                                | 60.0   |

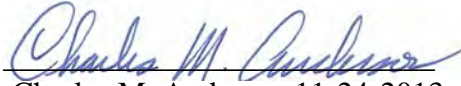
Based on the fact that there is no populated area or major highways within the interference contour and that the interference contour clears ground level by at least 8.7 meters in the area it is clear that the interference contour will not reach any populated area or major highways. Based on this showing, 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#1065875) using a two bay PSI 0.75 wavelength spaced, circularly polarized directional antenna. The RF contribution of the proposed translator was calculated to be 4.96  $\mu\text{Watts}/\text{cm}^2$  using the formula included below and a worst case vertical factor of 1.0. This is 2.48% 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.

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

It is concluded that the proposed translator facility complies with Commission RF radiation limits.



Charles M. Anderson 11-24-2013  
1519 Euclid Avenue  
Bowling Green, KY 42103  
270-782-0246

# E1 CHANNEL STUDY

REFERENCE  
38 06 28.0 N.  
85 42 46.0 W.

CH# 261D - 100.1 MHz, Pwr= 0.25 kw DA, HAAT= 151.6 M, COR= 320 M  
Average Protected F(50-50)= 16.0 km  
Standard Directional

DISPLAY DATES  
DATA 11-24-13  
SEARCH 11-24-13

| CH<br>CITY                  | CALL | TYPE<br>STATE | ANT<br>AZI<br><-- | DIST<br>FILE #            | LAT<br>LNG               | PWR(kw)<br>HAAT(M) | INT(km)<br>COR(M) | PRO(km)<br>LICENSEE                | *IN*<br>(Overlap in km) | *OUT*      |
|-----------------------------|------|---------------|-------------------|---------------------------|--------------------------|--------------------|-------------------|------------------------------------|-------------------------|------------|
| 259B<br>Louisville          | WDJX | LIC _CN<br>KY | 339.0<br>159.0    | 30.59<br>BLH19870522KC    | 38 21 53.0<br>85 50 18.0 | 24.000<br>218      | 6.5<br>413        | 70.5<br>Mlb-louisville Iv, Llc     | 6.1                     | -41.8* (1) |
| 263C2<br>Louisville         | WLGX | LIC _CX<br>KY | 60.6<br>240.7     | 19.08<br>BLH20090818AAV   | 38 11 30.8<br>85 31 21.2 | 37.000<br>169      | 5.9<br>367        | 51.9<br>Clear Channel Broadcasting | -1.3                    | -33.9* (1) |
| 261A<br>Irvington           | NEW  | CP _CX<br>KY  | 251.4<br>71.0     | 63.32<br>BNPH20110630AIW  | 37 55 27.3<br>86 23 50.0 | 6.000<br>100       | 82.1<br>284       | 25.0<br>Panther Communications Llc | -31.6*                  | 4.2        |
| 261C2<br>Winchester         | WKQQ | LIC NC_<br>KY | 88.7<br>269.5     | 111.03<br>BLH20000306ACK  | 38 07 24.0<br>84 26 37.0 | 20.000<br>194      | 124.8<br>485      | 49.9<br>Citicasters Licenses, Inc. | -28.9*                  | 11.0       |
| 261D 1551184<br>Louisville  |      | APP DV_<br>KY | 75.9<br>256.2     | 48.79<br>BNPFT20030317KCW | 38 12 49.0<br>85 10 16.0 | 0.250<br>69        | 40.8<br>307       | 11.8<br>W&b Broadcasting, Inc.     | -6.6                    | -12.3      |
| 261D 1571782<br>Shelbyville |      | APP DC_<br>KY | 75.9<br>256.2     | 48.79<br>BNPFT20130830ABR | 38 12 49.0<br>85 10 16.0 | 0.140<br>93        | 40.3<br>331       | 11.8<br>W&b Broadcasting, Inc.     | -6.3                    | -12.2      |
| 261A<br>French Lick         | WFLQ | LIC _CN<br>IN | 304.9<br>124.3    | 95.37<br>BMLH19921202KD   | 38 35 41.0<br>86 36 48.0 | 6.000<br>91        | 84.2<br>287       | 24.6<br>Willtronics Broadcasting   | -5.7                    | 14.0       |
| 207B<br>Louisville          | WFPL | LIC _CN<br>KY | 338.8<br>158.8    | 30.70<br>BLED19981005KB   | 38 21 55.0<br>85 50 24.0 | 21.000<br>236      | 41.4<br>426       | 12.0<br>Kentucky Public Radio, Inc | 14.5R                   | 16.2M      |
| 261D 649263<br>Seymour      |      | APP _C_<br>IN | 350.8<br>170.7    | 95.90<br>BNPFT20030317FEV | 38 57 33.0<br>85 53 24.0 | 0.250<br>26        | 24.3<br>205       | 7.2<br>The Trustees Of Indiana Un  | 54.1                    | 33.2       |
| 261D 1570605<br>Seymour     |      | APP _C_<br>IN | 351.6<br>171.5    | 97.95<br>BNPFT20130830APL | 38 58 45.0<br>85 52 45.0 | 0.080<br>46        | 23.4<br>226       | 6.9<br>The Trustees Of Indiana Un  | 56.9                    | 35.5       |
| 260C3<br>Mannsville         | WVLC | LIC _CN<br>KY | 156.1<br>336.4    | 114.17<br>BLH19950127KD   | 37 10 04.0<br>85 11 26.0 | 11.000<br>150      | 60.7<br>413       | 41.1<br>Shoreline Communications,  | 42.7                    | 57.8       |

Terrain database is USGS 03 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  
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 protected contour.

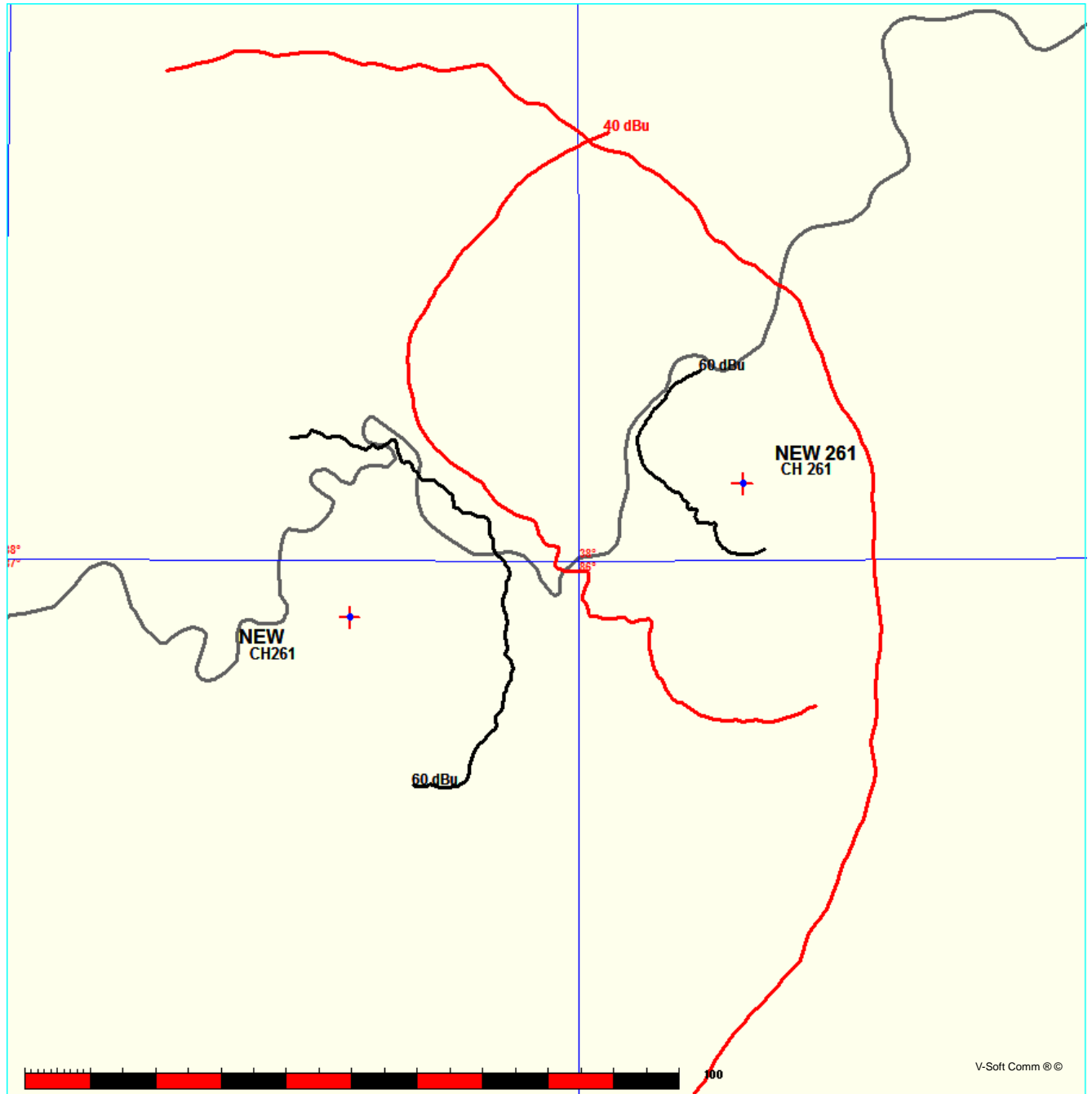
(1) See Technical Report for disproval of interference.

## E1A NEW 261 - NEW 261A CP INTERFERENCE PLOT

FMCommander Single Allocation Study - 11-24-2013 - USGS 03 SEC  
NEW 261's Overlaps (In= -31.64 km, Out= 4.19 km)

NEW 261 CH 261 D DA  
Lat= 38 06 28.0, Lng= 85 42 46.0  
0.25 kW 151.6 M HAAT, 320 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

NEW-C CH 261 A BNPH20110630AIW  
Lat= 37 55 27.3, Lng= 86 23 50.0  
6.0 kW 100 M HAAT, 284 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



# EXHIBIT E1B

## 261-CROWN

Latitude: 38-06-28 N  
Longitude: 085-42-46 W  
ERP: 0.162 kW  
Channel: 261  
Frequency: 100.1 MHz  
AMSL Height: 320.0 m  
Elevation: 260.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: None

## WDJX

BLH19870522KC  
Latitude: 38-21-53 N  
Longitude: 085-50-18 W  
ERP: 24.00 kW  
Channel: 259  
Frequency: 99.7 MHz  
AMSL Height: 413.0 m  
Elevation: 297.0 m  
Horiz. Pattern: Omni

## WLGX

BLH20090818AAV  
Latitude: 38-11-30.80 N  
Longitude: 085-31-21.20 W  
ERP: 37.00 kW  
Channel: 263  
Frequency: 100.5 MHz  
AMSL Height: 367.0 m  
Elevation: 228.0 m  
Horiz. Pattern: Omni

WLGX 79.83 DBU

113.65 DBU (50:10) FOR REDUCED ERP  
OF 0.162 KW AT 14.6 DEGREES DEPRESSION  
ANGLE.

WDJX 73.65 DBU

261-CROWN

Scale 1:5,000

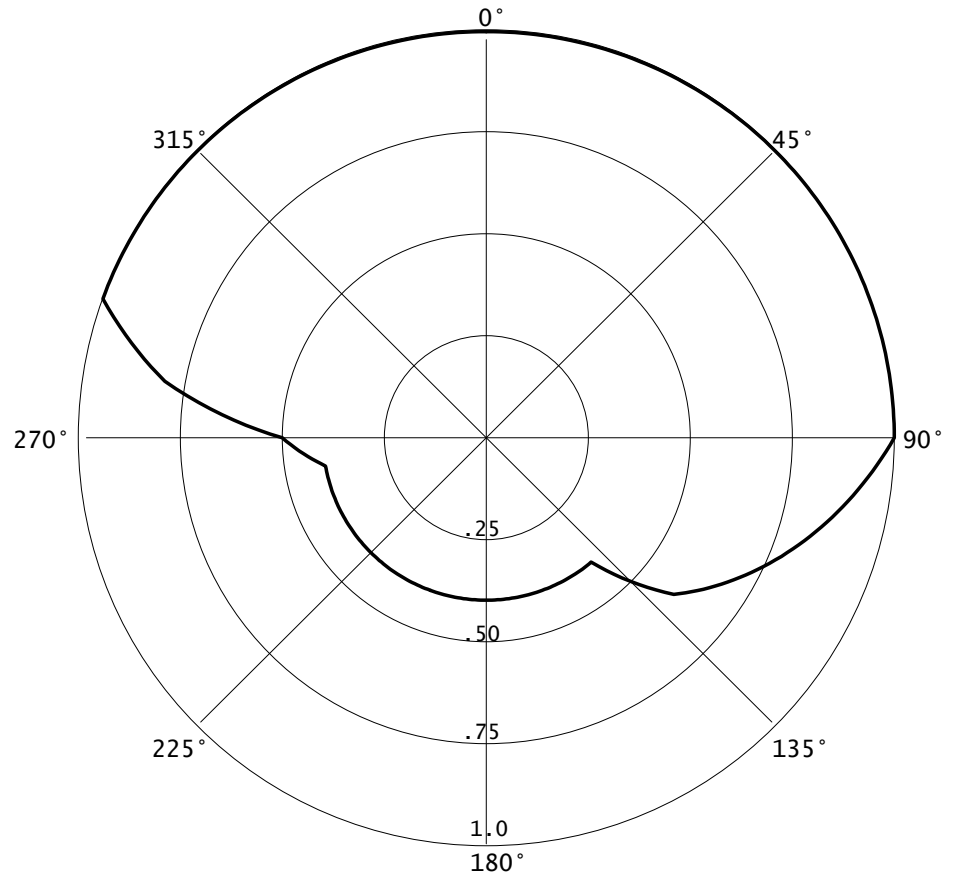
0 0.07 0.13 0.2 km

EXHIBIT E1C  
AERIAL VIEW OF REDUCED ERP 113.65 DBU  
INTERFERENCE CONTOUR

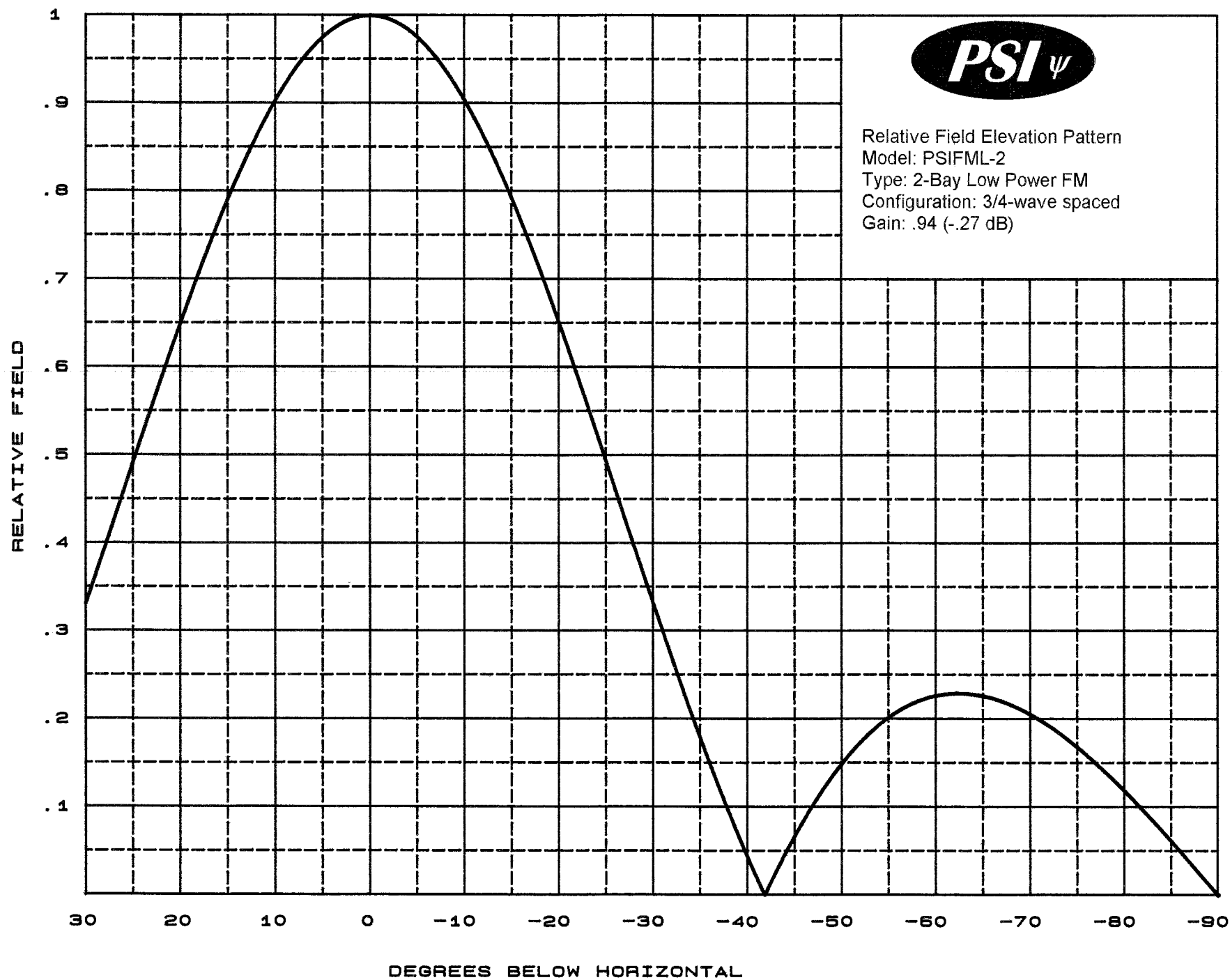


Graph is Relative Field

| 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 | 1.000 | -06.021 | 0.250 |
| 060 | 1.000 | -06.021 | 0.250 |
| 070 | 1.000 | -06.021 | 0.250 |
| 080 | 1.000 | -06.021 | 0.250 |
| 090 | 1.000 | -06.021 | 0.250 |
| 100 | 0.900 | -06.936 | 0.202 |
| 110 | 0.800 | -07.959 | 0.160 |
| 120 | 0.700 | -09.119 | 0.122 |
| 130 | 0.600 | -10.458 | 0.090 |
| 140 | 0.400 | -13.979 | 0.040 |
| 150 | 0.400 | -13.979 | 0.040 |
| 160 | 0.400 | -13.979 | 0.040 |
| 170 | 0.400 | -13.979 | 0.040 |
| 180 | 0.400 | -13.979 | 0.040 |
| 190 | 0.400 | -13.979 | 0.040 |
| 200 | 0.400 | -13.979 | 0.040 |
| 210 | 0.400 | -13.979 | 0.040 |
| 220 | 0.400 | -13.979 | 0.040 |
| 230 | 0.400 | -13.979 | 0.040 |
| 240 | 0.400 | -13.979 | 0.040 |
| 250 | 0.400 | -13.979 | 0.040 |
| 260 | 0.400 | -13.979 | 0.040 |
| 270 | 0.500 | -12.041 | 0.063 |
| 280 | 0.800 | -07.959 | 0.160 |
| 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 |









# **Propagation Systems Inc.**

Elevation Pattern Tabulation

Antenna: PSIFML-2 Special

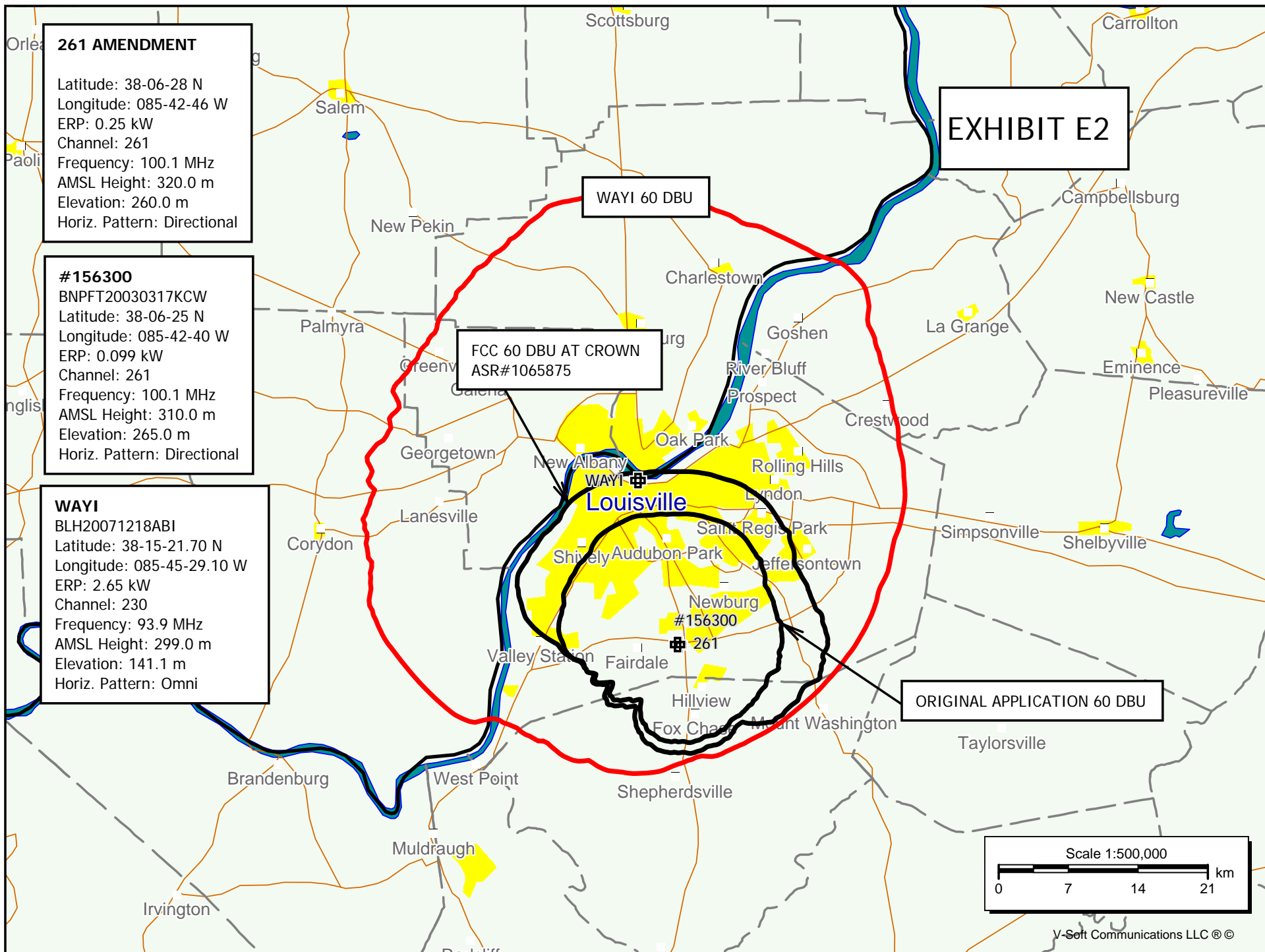
Bay spacing: 3/4 wave

| Angle | Field | dB      | Angle | Field | dB      | Angle | Field | dB     |
|-------|-------|---------|-------|-------|---------|-------|-------|--------|
| -90.0 | 0.001 | -60.000 | -50.0 | 0.149 | -16.513 | -10.0 | 0.903 | -0.883 |
| -89.0 | 0.012 | -38.221 | -49.0 | 0.135 | -17.364 | -9.0  | 0.921 | -0.713 |
| -88.0 | 0.025 | -32.201 | -48.0 | 0.120 | -18.405 | -8.0  | 0.937 | -0.561 |
| -87.0 | 0.037 | -28.679 | -47.0 | 0.104 | -19.677 | -7.0  | 0.952 | -0.429 |
| -86.0 | 0.049 | -26.207 | -46.0 | 0.086 | -21.289 | -6.0  | 0.964 | -0.315 |
| -85.0 | 0.061 | -24.285 | -45.0 | 0.068 | -23.404 | -5.0  | 0.975 | -0.219 |
| -84.0 | 0.073 | -22.748 | -44.0 | 0.048 | -26.425 | -4.0  | 0.984 | -0.139 |
| -83.0 | 0.085 | -21.443 | -43.0 | 0.027 | -31.481 | -3.0  | 0.991 | -0.079 |
| -82.0 | 0.096 | -20.349 | -42.0 | 0.005 | -46.848 | -2.0  | 0.996 | -0.036 |
| -81.0 | 0.107 | -19.378 | -41.0 | 0.018 | -34.664 | -1.0  | 0.999 | -0.009 |
| -80.0 | 0.118 | -18.538 | -40.0 | 0.043 | -27.417 | 0.0   | 1.000 | 0.000  |
| -79.0 | 0.129 | -17.792 | -39.0 | 0.068 | -23.365 | 1.0   | 0.999 | -0.009 |
| -78.0 | 0.139 | -17.125 | -38.0 | 0.094 | -20.529 | 2.0   | 0.996 | -0.036 |
| -77.0 | 0.149 | -16.522 | -37.0 | 0.121 | -18.329 | 3.0   | 0.991 | -0.079 |
| -76.0 | 0.159 | -15.984 | -36.0 | 0.149 | -16.531 | 4.0   | 0.984 | -0.139 |
| -75.0 | 0.168 | -15.508 | -35.0 | 0.178 | -14.998 | 5.0   | 0.975 | -0.219 |
| -74.0 | 0.176 | -15.072 | -34.0 | 0.207 | -13.669 | 6.0   | 0.964 | -0.315 |
| -73.0 | 0.184 | -14.685 | -33.0 | 0.237 | -12.489 | 7.0   | 0.952 | -0.429 |
| -72.0 | 0.192 | -14.335 | -32.0 | 0.268 | -11.431 | 8.0   | 0.937 | -0.561 |
| -71.0 | 0.199 | -14.026 | -31.0 | 0.299 | -10.475 | 9.0   | 0.921 | -0.713 |
| -70.0 | 0.205 | -13.752 | -30.0 | 0.331 | -9.602  | 10.0  | 0.903 | -0.882 |
| -69.0 | 0.211 | -13.518 | -29.0 | 0.363 | -8.801  | 11.0  | 0.884 | -1.072 |
| -68.0 | 0.216 | -13.315 | -28.0 | 0.395 | -8.061  | 12.0  | 0.863 | -1.279 |
| -67.0 | 0.220 | -13.146 | -27.0 | 0.428 | -7.377  | 13.0  | 0.841 | -1.508 |
| -66.0 | 0.224 | -13.009 | -26.0 | 0.460 | -6.742  | 14.0  | 0.817 | -1.757 |
| -65.0 | 0.226 | -12.904 | -25.0 | 0.493 | -6.151  | 15.0  | 0.792 | -2.029 |
| -64.0 | 0.228 | -12.834 | -24.0 | 0.525 | -5.599  | 16.0  | 0.765 | -2.322 |
| -63.0 | 0.229 | -12.800 | -23.0 | 0.557 | -5.083  | 17.0  | 0.738 | -2.639 |
| -62.0 | 0.229 | -12.794 | -22.0 | 0.589 | -4.603  | 18.0  | 0.710 | -2.979 |
| -61.0 | 0.228 | -12.829 | -21.0 | 0.620 | -4.154  | 19.0  | 0.680 | -3.344 |
| -60.0 | 0.227 | -12.898 | -20.0 | 0.650 | -3.736  | 20.0  | 0.650 | -3.736 |
| -59.0 | 0.224 | -13.009 | -19.0 | 0.680 | -3.344  | 21.0  | 0.620 | -4.154 |
| -58.0 | 0.220 | -13.158 | -18.0 | 0.710 | -2.979  | 22.0  | 0.589 | -4.603 |
| -57.0 | 0.215 | -13.351 | -17.0 | 0.738 | -2.639  | 23.0  | 0.557 | -5.083 |
| -56.0 | 0.209 | -13.600 | -16.0 | 0.765 | -2.323  | 24.0  | 0.525 | -5.599 |
| -55.0 | 0.202 | -13.894 | -15.0 | 0.792 | -2.029  | 25.0  | 0.493 | -6.151 |
| -54.0 | 0.194 | -14.260 | -14.0 | 0.817 | -1.759  | 26.0  | 0.460 | -6.742 |
| -53.0 | 0.184 | -14.685 | -13.0 | 0.840 | -1.510  | 27.0  | 0.428 | -7.377 |
| -52.0 | 0.174 | -15.192 | -12.0 | 0.863 | -1.281  | 28.0  | 0.395 | -8.061 |
| -51.0 | 0.162 | -15.795 | -11.0 | 0.884 | -1.072  | 29.0  | 0.363 | -8.801 |
|       |       |         |       |       |         | 30.0  | 0.331 | -9.602 |

file: FML 2-bay elevation tabulation

revision: A

Date: 1/28/08



## E3 Registration 1065875

 [Map Registration](#)

### Registration Detail

|             |          |             |             |
|-------------|----------|-------------|-------------|
| Reg Number  | 1065875  | Status      | Constructed |
| File Number | A0712943 | Constructed | 06/04/1999  |
| EMI         | No       | Dismantled  |             |
| NEPA        | No       |             |             |

### Antenna Structure

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

#### Location (in NAD83 Coordinates)

|                       |                            |                               |                   |
|-----------------------|----------------------------|-------------------------------|-------------------|
| Lat/Long              | 38-06-27.9 N 085-42-45.6 W | Address                       | 2725 GRANGER ROAD |
| City, State           | LOUISVILLE , KY            |                               |                   |
| Zip                   | 40118                      | County                        | JEFFERSON         |
| Center of<br>AM Array |                            | Position of<br>Tower in Array |                   |

#### Heights (meters)

|  |  |
|--|--|
| Elevation of Site Above Mean Sea Level | Overall Height Above Ground (AGL)                |
| 260.3                                  | 64.9   |
| Overall Height Above Mean Sea Level    | Overall Height Above Ground w/o<br>Appurtenances |
| 325.2                                  | 61.3   |

### Painting and Lighting Specifications

FAA Chapters 4, 5, 6, 8, 13

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

### FAA Notification

|           |                  |                |            |
|-----------|------------------|----------------|------------|
| FAA Study | 2006-ASO-3059-OE | FAA Issue Date | 06/01/2006 |
|-----------|------------------|----------------|------------|

### Owner & Contact Information

|     |            |                   |
|-----|------------|-------------------|
| FRN | 0003247087 | Owner Entity Type |
|-----|------------|-------------------|

#### Owner

|   |  |
|---|--|
| CROWN COMMUNICATION<br>LLC                    | P: (336)643-2524<br>F:                   |
| Attention To: REGULATORY<br>DEPARTMENT        | E: REGULATORY.DEPARTMENT@CROWNCastle.COM |
| 2000 CORPORATE DRIVE<br>CANONSBURG , PA 15317 |  |

#### Contact

|                       |                                    |
|-----------------------|------------------------------------|
| VERRE , CHRISTINE A   | P: (336)643-2524                   |
| 2000 CORPORATE DRIVE  | F:                                 |
| CANONSBURG , PA 15317 | E: CHRISTINE.VERRE@CROWNCastle.COM |

### Last Action Status

|         |              |          |            |
|---------|--------------|----------|------------|
| Status  | Constructed  | Received | 02/01/2011 |
| Purpose | Admin Update | Entered  | 02/01/2011 |

# Output from NADCON for station NEW

North American Datum Conversion

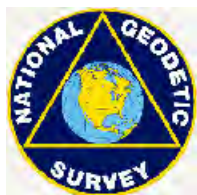
NAD 83 to NAD 27

NADCON Program Version 2.11

=====

Transformation #: 1                      Region: Conus

|                               | Latitude       | Longitude      |
|-------------------------------|----------------|----------------|
| NAD 27 datum values:          | 38 06 27.65461 | 85 42 45.74324 |
| NAD 83 datum values:          | 38 06 27.90000 | 85 42 45.60000 |
| NAD 27 - NAD 83 shift values: | -0.24539       | 0.14324(secs.) |
|                               | -7.566         | 3.490 (meters) |
| Magnitude of total shift:     |                | 8.332(meters)  |



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