

BNPFT-20030314CCN - LONG FORM APPLICATION

This long form application is submitted pursuant to DA 15-479 for short form file number BNPFT-20030314CCN. Minor modifications are made in site, HAAT and a change to the first adjacent channel - 264. The translator will provide non-fill-in service for noncommercial station KNWI in Osceola, IA (FCC ID #37454).

Allocation discussion:

All exhibits were developed utilizing the V-Soft provided USGS 3 second terrain database. Allocation exhibits are provided as follows:

- E1 Channel study
- E1A Interference analysis to KDRB on 262C
- E1B Aerial view of site
- E2 60 dBu contours
- E3 ASR

A channel study is included as E1 demonstrating compliance with 74.1204 with the exception of 2nd adjacent channel station KDRB analyzed below. Exhibit E2 demonstrates that the proposed 60 dBu overlaps the short form 60 dBu as originally filed. The proposed ERP of 99 Watts is less than the 115Watts permitted by §74.1235 and is limited to 99W by an IF spacing.

HAAT TABULATION N. Lat. = 41-35-35 W. Lng. = 93-37-48 (NAD27):

FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC

| Azi. | AV EL | HAAT(m) | dBk | 60 dBu (km) | |
|------|-------|---------|--------|-------------|-----------------------------|
| 000 | 271.1 | 116.9 | -10.04 | 11.07 | |
| 030 | 273.5 | 114.5 | -10.04 | 10.97 | |
| 060 | 275.0 | 113.0 | -10.04 | 10.90 | |
| 090 | 263.5 | 124.5 | -10.04 | 11.40 | |
| 120 | 233.3 | 154.7 | -10.04 | 12.75 | Maximum MERP = 154.7 meters |
| 150 | 266.9 | 121.1 | -10.04 | 11.25 | |
| 180 | 268.4 | 119.6 | -10.04 | 11.19 | |
| 210 | 272.1 | 115.9 | -10.04 | 11.03 | |
| 240 | 252.7 | 135.3 | -10.04 | 11.87 | |
| 270 | 281.7 | 106.3 | -10.04 | 10.59 | |
| 300 | 287.4 | 100.6 | -10.04 | 10.32 | |
| 330 | 259.6 | 128.4 | -10.04 | 11.57 | |

Ave E1= 267.11 M HAAT= 120.89 M AMSL= 388

§74.1235 for translators located outside Zones 1 and 1A:

(2) For FM translators located in all other areas:

| Radial HAAT (meters) | Maximum ERP (MERP in watts) |
|------------------------------------|-----------------------------|
| Less than or equal to 107 | 250 |
| 108 to 118 | 205 |
| 119 to 130 | 170 |
| 131 to 144 | 140 |
| 145 to 157 | 115 |
| 158 to 173 | 92 |
| 174 to 192 | 75 |
| 193 to 212 | 62 |
| 213 to 235 | 50 |
| 236 to 260 | 41 |
| 261 to 285 | 34 |
| 286 to 310 | 28 |
| 311 to 345 | 23 |
| 346 to 380 | 19 |
| 381 to 425 | 15.5 |
| 426 to 480 | 13 |
| 481 to 540 | 11 |
| Greater than or equal to 541 | 10 |

KDRB 262C analysis:

The proposed channel 264 facility will be located inside the protected contour of 2nd adjacent channel station KDRB on 262C. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site.

The KDRB (50,50) contour at the proposed site is 88.65 dBu and the (50,10) interference contour is 128.65 dBu or 25.77 meters. Exhibit E1A demonstrates that this interfering contour is at least 108.6 meters above ground.

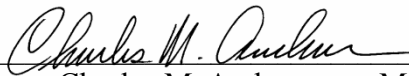
A careful examination of the interference area's aerial photograph (see E1B) from Google Earth and Google Street Views reveals that the structure below the tower is three story (see street view) and that there are no other buildings within the reach of the interference contour.

Clearly, 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 RF contribution of the proposed translator was calculated using a worst case F factor of 1.0 for the Nicom BKG-77 single bay antenna mounted at 120 meters AGL using the formula provided below to be 0.47 $\mu\text{Watts}/\text{cm}^2$ or 0.24% of the maximum permissible 200 $\mu\text{Watts}/\text{cm}^2$ exposure for general population/uncontrolled exposure. This is less than the 5% required for consideration, and, in any event, far less than the permissible level.

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


Charles M. Anderson May 13, 2015

| E1 CHANNEL STUDY | | | | | | | | | | | |
|--|--------------------|---------------|--------------|----------------|---------------------------|--------------------------|--------------------|-------------------|------------------------------------|-------------------------|------------|
| University Of Northwestern-st. Paul | | | | | | | | | | | |
| CH# 264D - 100.7 MHz, Pwr= 0.099 kw, HAAT= 120.9 M, COR= 388 M | | | | | | | | | | | |
| Average Protected F(50-50)= 11.25 km | | | | | | | | | | | |
| Omni-directional | | | | | | | | | | | |
| DISPLAY DATES | | | | | | | | | | | |
| DATA 05-12-15 | | | | | | | | | | | |
| SEARCH 05-12-15 | | | | | | | | | | | |
| CH CITY | CALL | TYPE STATE | ANT STATE | AZI <-- | DIST FILE # | LAT LNG | PWR(kw) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *IN* (Overlap in km) | *OUT* |
| 262C Des Moines | KDRB | LIC _CX IA | | 2.7 182.7 | 26.37 BLH20050323ACG | 41 49 48.0 93 36 54.0 | 100.000 547 | 13.0 837 | 89.4 Citicasters Licenses, Inc. | 2.2 | -63.7* (1) |
| 265D West Des Moines | 1563917 | APP _C_ IA | | 253.9 73.8 | 5.77 BNPFT20030314CCN | 41 34 43.0 93 41 48.0 | 0.099 29 | 8.9 297 | 6.2 University Of Northwestern | -14.0* | -16.1* |
| 264C3 Eagle Grove | KJYL | LIC _C_ IA | | 346.0 165.8 | 121.74 BMLH20091008ABM | 42 39 18.0 93 59 24.0 | 25.000 100 | 113.1 442 | 38.6 Minn-iowa Christian Broadc | -3.5 | 42.6 |
| 264C1 Iowa City | KKRQ | LIC _CX IA | | 83.3 264.7 | 175.72 BMLH20080521AAF | 41 45 26.0 91 31 31.0 | 100.000 162 | 154.4 389 | 58.1 Citicasters Licenses, Inc. | 10.0 | 78.8 |
| 266C1 Marshalltown | KXIA | LIC _CN IA | | 51.5 232.0 | 73.98 BLH19950727KE | 42 00 19.0 92 55 45.0 | 100.000 200 | 7.8 491 | 62.1 Marshalltown Broadcasting, | 55.3 | 11.2 |
| 264C0 Omaha | KGBI-FM | LIC NCX NE | | 261.9 80.3 | 202.17 BMLH20100625ABK | 41 18 40.0 96 01 37.0 | 100.000 309 | 174.3 650 | 73.9 Pennsylvania Media Associa | 16.8 | 91.9 |
| 267C3 Creston | KSIB-FM | LIC _CN IA | | 228.5 48.1 | 83.28 BLH19901130KG | 41 05 41.0 94 22 30.0 | 19.000 111 | 4.2 499 | 40.7 G. O. Radio, Limited | 67.5 | 41.8 |
| 264C1 Carrollton | KMZU | LIC _CN MO | | 175.5 355.6 | 248.30 BLH19900917KA | 39 21 59.0 93 24 12.0 | 99.000 302 | 171.9 516 | 72.4 Kanza, Inc. | 65.2 | 138.0 |

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= West 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 E1A for disproval of interference.

E1A KDRB INTERFERENCE ANALYSIS

NEW WEST DES MOINES, IA

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.099

Translator or LPFM Antenna Height AG = 120 Meters

NEW Antenna Model = BKG-77-1

Protected Station's Contour = 88.65466 dBu

Translator's or LPFM's full Interference contour 128.65466

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.099 kW

Distance between stations = 26.4 km

Protected Station= KDRB, 100 kW, 837 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 | 0.0990 | 025.7682 | 025.7682 | 120.000 |
| 05.00 | 0.999 | 1.0 | 0.0988 | 025.7425 | 025.6445 | 117.756 |
| 10.00 | 0.982 | 1.0 | 0.0955 | 025.3044 | 024.9200 | 115.606 |
| 15.00 | 0.954 | 1.0 | 0.0901 | 024.5829 | 023.7453 | 113.637 |
| 20.00 | 0.918 | 1.0 | 0.0834 | 023.6552 | 022.2286 | 111.909 |
| 25.00 | 0.872 | 1.0 | 0.0753 | 022.4699 | 020.3646 | 110.504 |
| 30.00 | 0.818 | 1.0 | 0.0662 | 021.0784 | 018.2544 | 109.461 |
| 35.00 | 0.758 | 1.0 | 0.0569 | 019.5323 | 015.9999 | 108.797 |
| 40.00 | 0.691 | 1.0 | 0.0473 | 017.8058 | 013.6401 | 108.555 (Minimum) |
| 45.00 | 0.616 | 1.0 | 0.0376 | 015.8732 | 011.2241 | 108.776 |
| 50.00 | 0.538 | 1.0 | 0.0287 | 013.8633 | 008.9112 | 109.380 |
| 55.00 | 0.465 | 1.0 | 0.0214 | 011.9822 | 006.8727 | 110.185 |
| 60.00 | 0.391 | 1.0 | 0.0151 | 010.0754 | 005.0377 | 111.274 |
| 65.00 | 0.313 | 1.0 | 0.0097 | 008.0655 | 003.4086 | 112.690 |
| 70.00 | 0.239 | 1.0 | 0.0057 | 006.1586 | 002.1064 | 114.213 |
| 75.00 | 0.176 | 1.0 | 0.0031 | 004.5352 | 001.1738 | 115.619 |
| 80.00 | 0.129 | 1.0 | 0.0016 | 003.3241 | 000.5772 | 116.726 |
| 85.00 | 0.103 | 1.0 | 0.0011 | 002.6541 | 000.2313 | 117.356 |
| 90.00 | 0.004 | 1.0 | 0.0000 | 000.1031 | 000.0000 | 119.897 |

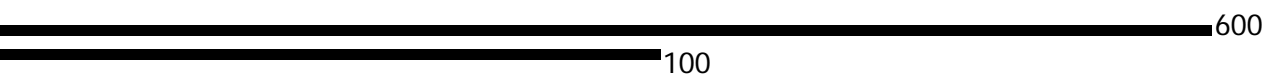
Full vertical elevation pattern for BKG-77-1 appended to report.

E1B AERIAL VIEW VIEW OF SITE



Google earth

feet
meters



E1B STREET LEVEL VIEW OF SITE



© 2015 Google

© 2015 Google

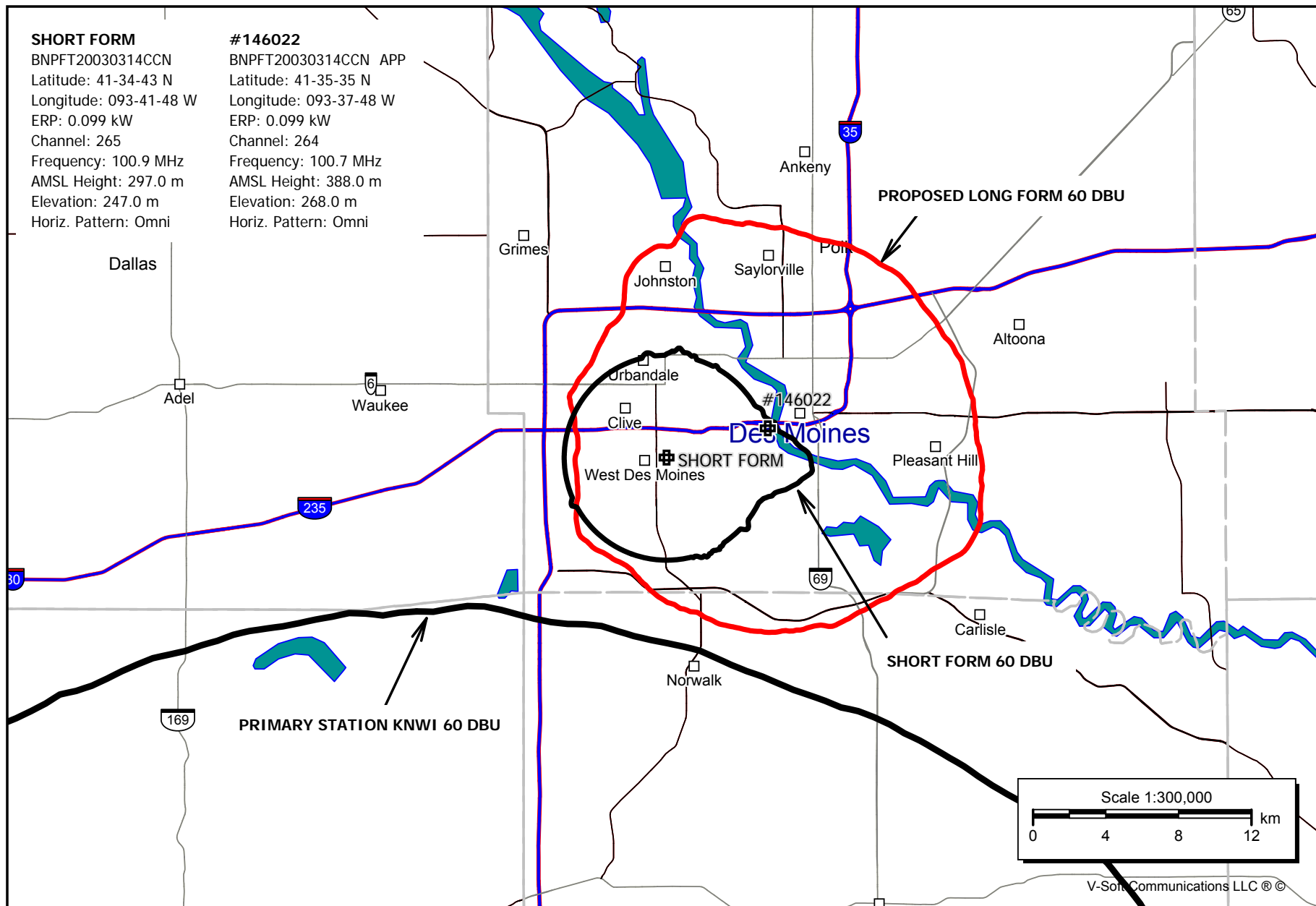
Google earth

Google earth

feet
meters



E2 CONTOURS



E3 Registration 1016800

 [Map Registration](#)

Registration Detail

| | | | |
|-------------|----------|-------------|-------------|
| Reg Number | 1016800 | Status | Constructed |
| File Number | A0935880 | Constructed | 01/01/1985 |
| EMI | No | Dismantled | |
| NEPA | No | | |

Antenna Structure

Structure Type LTOWER - Lattice Tower

Location (in NAD83 Coordinates)

| | | | |
|--------------------|----------------------------|----------------------------|------------|
| Lat/Long | 41-35-35.0 N 093-37-49.0 W | Address | 888 9TH ST |
| City, State | DES MOINES , IA | | |
| Zip | 50309 | County | POLK |
| Center of AM Array | | Position of Tower in Array | |

Heights (meters)

| | |
|--|---|
| Elevation of Site Above Mean Sea Level | Overall Height Above Ground (AGL) |
| 268.0 | 163.6 |
| Overall Height Above Mean Sea Level | Overall Height Above Ground w/o Appurtenances |
| 431.6 | 152.0 |

Painting and Lighting Specifications

FAA Chapters 4, 8, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1H

FAA Notification

| | | | |
|-----------|--------------|----------------|------------|
| FAA Study | 84-ACE-39-OE | FAA Issue Date | 04/21/1993 |
|-----------|--------------|----------------|------------|

Owner & Contact Information

| | | | |
|-----|------------|-------------------|-------------|
| FRN | 0002538445 | Owner Entity Type | Corporation |
|-----|------------|-------------------|-------------|

Owner

| | |
|----------------------------|---------------------------|
| Hearst Properties Inc. | P: (919)839-0300 |
| Attention To: Mark J. Prak | F: |
| P.O. Box 1800 | E: mprak@brookspierce.com |
| Raleigh , NC 27602 | |

Contact

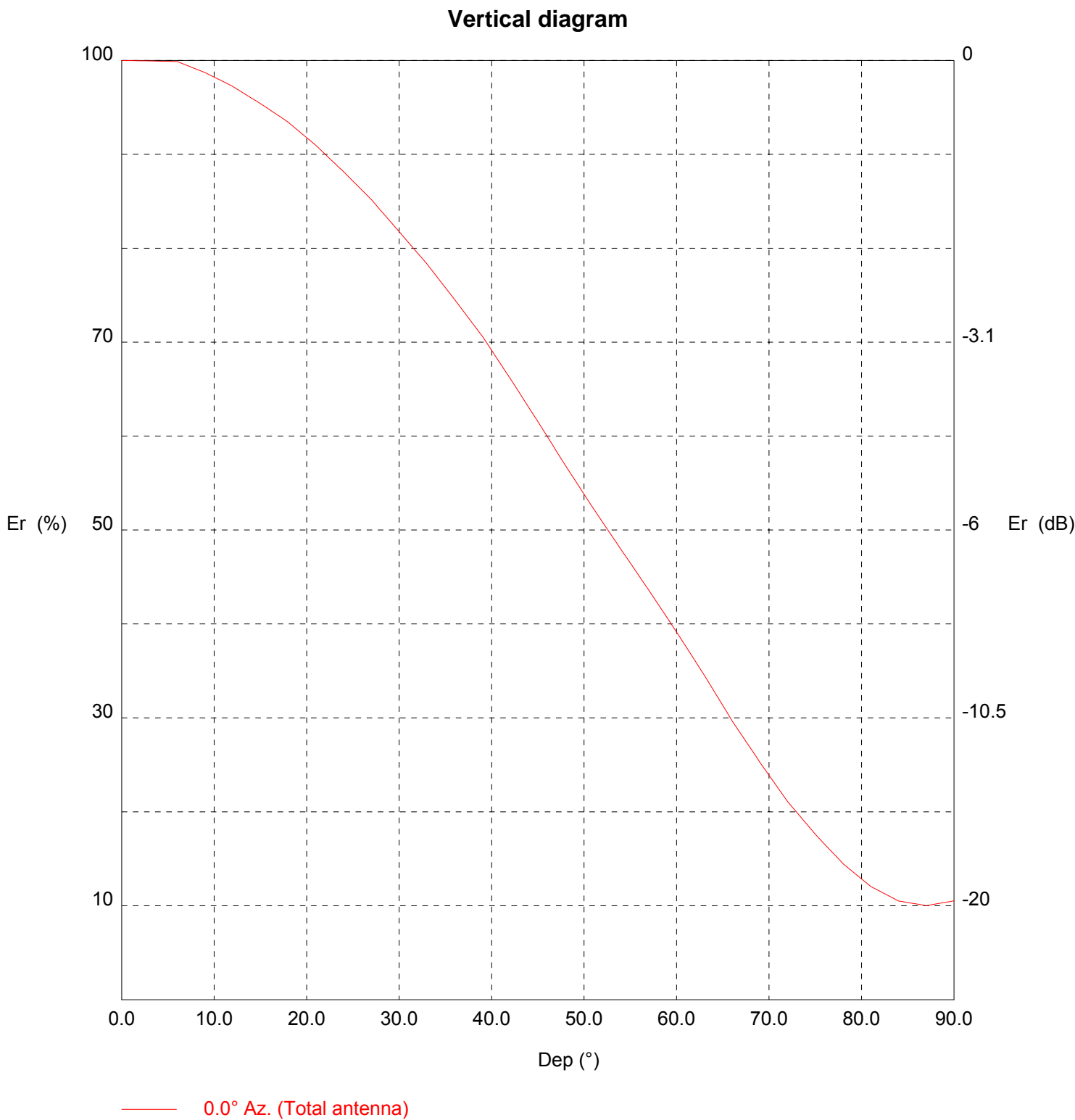
| | |
|-----------------------|----------------------|
| Wilde , Chris | P: (515)247-8867 |
| 888 Ninth Street | F: |
| Des Moines , IA 50309 | E: cwilde@hearst.com |

Last Action Status

| | | | |
|---------|--------------|----------|------------|
| Status | Constructed | Received | 02/11/2015 |
| Purpose | Notification | Entered | 02/11/2015 |
| Mode | Interactive | | |

Related Applications

| | | |
|------------|----------|---------------------|
| 02/11/2015 | A0935880 | - Notification (NT) |
| 02/04/2015 | A0934717 | - Modification (MD) |
| 03/08/2013 | A0829725 | - Admin Update (AU) |



TX station:

Site name: 1 BAY ANTENNA

Frequency: 100.00 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 | 373.6 | 30.0 | 81.8 | 249.8 | 60.0 | 39.1 | 57.2 |
| 0.5 | 100.0 | 373.6 | 30.5 | 81.2 | 246.3 | 60.5 | 38.4 | 55.0 |
| 1.0 | 100.0 | 373.5 | 31.0 | 80.6 | 242.9 | 61.0 | 37.6 | 52.8 |
| 1.5 | 100.0 | 373.4 | 31.5 | 80.1 | 239.5 | 61.5 | 36.8 | 50.7 |
| 2.0 | 100.0 | 373.4 | 32.0 | 79.5 | 236.1 | 62.0 | 36.1 | 48.6 |
| 2.5 | 100.0 | 373.3 | 32.5 | 78.9 | 232.7 | 62.5 | 35.3 | 46.6 |
| 3.0 | 99.9 | 373.3 | 33.0 | 78.3 | 229.3 | 63.0 | 34.5 | 44.6 |
| 3.5 | 99.9 | 373.2 | 33.5 | 77.7 | 225.6 | 63.5 | 33.7 | 42.5 |
| 4.0 | 99.9 | 373.1 | 34.0 | 77.1 | 222.0 | 64.0 | 32.9 | 40.5 |
| 4.5 | 99.9 | 373.0 | 34.5 | 76.4 | 218.3 | 64.5 | 32.1 | 38.6 |
| 5.0 | 99.9 | 372.9 | 35.0 | 75.8 | 214.7 | 65.0 | 31.3 | 36.6 |
| 5.5 | 99.9 | 372.8 | 35.5 | 75.2 | 211.1 | 65.5 | 30.5 | 34.8 |
| 6.0 | 99.9 | 372.8 | 36.0 | 74.5 | 207.6 | 66.0 | 29.7 | 33.0 |
| 6.5 | 99.7 | 371.3 | 36.5 | 73.9 | 204.0 | 66.5 | 29.0 | 31.4 |
| 7.0 | 99.5 | 369.9 | 37.0 | 73.2 | 200.4 | 67.0 | 28.2 | 29.8 |
| 7.5 | 99.3 | 368.4 | 37.5 | 72.6 | 196.8 | 67.5 | 27.5 | 28.3 |
| 8.0 | 99.1 | 367.0 | 38.0 | 71.9 | 193.3 | 68.0 | 26.8 | 26.8 |
| 8.5 | 98.9 | 365.5 | 38.5 | 71.3 | 189.8 | 68.5 | 26.0 | 25.3 |
| 9.0 | 98.7 | 364.1 | 39.0 | 70.6 | 186.3 | 69.0 | 25.3 | 23.9 |
| 9.5 | 98.5 | 362.3 | 39.5 | 69.9 | 182.4 | 69.5 | 24.6 | 22.6 |
| 10.0 | 98.2 | 360.5 | 40.0 | 69.1 | 178.6 | 70.0 | 23.9 | 21.3 |
| 10.5 | 98.0 | 358.7 | 40.5 | 68.4 | 174.7 | 70.5 | 23.2 | 20.1 |
| 11.0 | 97.7 | 356.9 | 41.0 | 67.6 | 170.9 | 71.0 | 22.5 | 18.9 |
| 11.5 | 97.5 | 355.1 | 41.5 | 66.9 | 167.2 | 71.5 | 21.8 | 17.7 |
| 12.0 | 97.2 | 353.3 | 42.0 | 66.1 | 163.5 | 72.0 | 21.1 | 16.6 |
| 12.5 | 96.9 | 351.1 | 42.5 | 65.4 | 159.7 | 72.5 | 20.5 | 15.7 |
| 13.0 | 96.6 | 348.9 | 43.0 | 64.6 | 156.0 | 73.0 | 19.9 | 14.8 |
| 13.5 | 96.3 | 346.7 | 43.5 | 63.9 | 152.3 | 73.5 | 19.3 | 14.0 |
| 14.0 | 96.0 | 344.5 | 44.0 | 63.1 | 148.7 | 74.0 | 18.8 | 13.2 |
| 14.5 | 95.7 | 342.3 | 44.5 | 62.3 | 145.1 | 74.5 | 18.2 | 12.4 |
| 15.0 | 95.4 | 340.1 | 45.0 | 61.6 | 141.6 | 75.0 | 17.6 | 11.6 |
| 15.5 | 95.1 | 337.8 | 45.5 | 60.8 | 138.0 | 75.5 | 17.1 | 10.9 |
| 16.0 | 94.7 | 335.4 | 46.0 | 60.0 | 134.4 | 76.0 | 16.6 | 10.2 |
| 16.5 | 94.4 | 333.1 | 46.5 | 59.2 | 130.9 | 76.5 | 16.0 | 9.6 |
| 17.0 | 94.1 | 330.8 | 47.0 | 58.4 | 127.5 | 77.0 | 15.5 | 9.0 |
| 17.5 | 93.8 | 328.4 | 47.5 | 57.6 | 124.1 | 77.5 | 15.0 | 8.4 |
| 18.0 | 93.4 | 326.1 | 48.0 | 56.8 | 120.7 | 78.0 | 14.5 | 7.8 |
| 18.5 | 93.0 | 323.3 | 48.5 | 56.1 | 117.5 | 78.5 | 14.1 | 7.4 |
| 19.0 | 92.6 | 320.4 | 49.0 | 55.3 | 114.4 | 79.0 | 13.7 | 7.0 |
| 19.5 | 92.2 | 317.5 | 49.5 | 54.6 | 111.3 | 79.5 | 13.3 | 6.6 |
| 20.0 | 91.8 | 314.7 | 50.0 | 53.8 | 108.2 | 80.0 | 12.9 | 6.2 |
| 20.5 | 91.4 | 311.9 | 50.5 | 53.1 | 105.2 | 80.5 | 12.5 | 5.8 |
| 21.0 | 91.0 | 309.1 | 51.0 | 52.3 | 102.2 | 81.0 | 12.0 | 5.4 |
| 21.5 | 90.5 | 305.9 | 51.5 | 51.6 | 99.4 | 81.5 | 11.8 | 5.2 |
| 22.0 | 90.0 | 302.7 | 52.0 | 50.8 | 96.6 | 82.0 | 11.5 | 5.0 |
| 22.5 | 89.5 | 299.6 | 52.5 | 50.1 | 93.8 | 82.5 | 11.3 | 4.8 |
| 23.0 | 89.1 | 296.5 | 53.0 | 49.4 | 91.1 | 83.0 | 11.0 | 4.5 |
| 23.5 | 88.6 | 293.4 | 53.5 | 48.6 | 88.4 | 83.5 | 10.8 | 4.3 |
| 24.0 | 88.1 | 290.3 | 54.0 | 47.9 | 85.8 | 84.0 | 10.5 | 4.1 |
| 24.5 | 87.6 | 287.0 | 54.5 | 47.2 | 83.2 | 84.5 | 10.4 | 4.1 |
| 25.0 | 87.2 | 283.8 | 55.0 | 46.5 | 80.7 | 85.0 | 10.3 | 4.0 |
| 25.5 | 86.7 | 280.6 | 55.5 | 45.7 | 78.2 | 85.5 | 10.3 | 3.9 |
| 26.0 | 86.2 | 277.4 | 56.0 | 45.0 | 75.7 | 86.0 | 10.2 | 3.9 |
| 26.5 | 85.7 | 274.2 | 56.5 | 44.3 | 73.3 | 86.5 | 10.1 | 3.8 |
| 27.0 | 85.2 | 271.1 | 57.0 | 43.6 | 71.0 | 87.0 | 10.0 | 3.7 |
| 27.5 | 84.6 | 267.5 | 57.5 | 42.8 | 68.6 | 87.5 | 10.1 | 3.8 |
| 28.0 | 84.0 | 263.9 | 58.0 | 42.1 | 66.2 | 88.0 | 10.2 | 3.9 |
| 28.5 | 83.5 | 260.3 | 58.5 | 41.4 | 63.9 | 88.5 | 10.3 | 3.9 |
| 29.0 | 82.9 | 256.8 | 59.0 | 40.6 | 61.6 | 89.0 | 10.4 | 4.0 |
| 29.5 | 82.3 | 253.3 | 59.5 | 39.9 | 59.4 | 89.5 | 10.4 | 4.1 |

Output from NADCON for station

North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

Transformation #: 1 Region: Conus

| | Latitude | Longitude |
|-------------------------------|----------------|------------------|
| NAD 27 datum values: | 41 35 35.03881 | 93 37 48.21434 |
| NAD 83 datum values: | 41 35 35.00000 | 93 37 49.00000 |
| NAD 27 - NAD 83 shift values: | 0.03881 | -0.78566(secs.) |
| | 1.197 | -18.196 (meters) |
| Magnitude of total shift: | | 18.235(meters) |



[NGS HOME PAGE](#)