MINOR LICENSE MODIFICATION APPLICATION
W216CN Chillicothe, OH, Relocate and change to 269D

July 17, 2021

TECHNICAL STATEMENT

This technical statement and attached exhibits have been prepared on behalf of Spirit Communications, Inc, licensee of W216CN, Chillicothe, OH (Facility ID 158620). The licensee proposes to modify the license (File no. 0000125216) to change frequency to the IF frequency, 269D, (53 channels removed), and relocate the translator. The proposed changes are considered minor under 74.1233. There will be no change to the primary station, WUFM, Channel 204B, Facility ID 20758.

Facilities Proposed

Location (NAD83)	39° 27’ 56” N Latitude, 82° 56’ 29” W Longitude
Channel	269D (101.7MHz)
Tower Overall AGL Height-	71.3m
Tower ASR	1039382
Proposed Antenna	PSI FML-1-DA
Antenna AGL Height-	46m
Site AMSL Height-	220.1m
COR AMSL Height	266m
ERP	250w Directional (EXHIBIT A)

Interference Study

ComStudy 2.2 search of channel 269 (101.7 MHz Class D) at 39-27-55.6 N,82-56-29.9 W.

CALL	CITY	ST	CHN	CL	DIST	SEP	BRNG	CLEARANCE
WNKO	NEW ALBANY	OH	269	B1	69.67	0.00	32.4	4.49 dB Exhibit A
WXBW	GALLIPOLIS	OH	268	B	95.88	0.00	139.7	6.70 dB Exhibit A
WOSA	GROVE CITY	OH	266	A	39.97	0.00	345.9	12.74 dB
W216CN	CHILLICOTHE	OH	216	D	16.05	0.00	183.3	16.0 LIC
W268CC	HILLSBORO	OH	268	D	66.31	0.00	240.0	18.77 dB
WKRQ	CINCINNATI	OH	270	B	140.07	0.00	254.4	23.10 dB
WXBW-FM1	HUNTINGTON	WV	268	D	122.05	0.00	164.3	23.98 dB
WKRQ	CINCINNATI	OH	270	B	139.55	0.00	254.7	24.40 dB
WKLN	WILMINGTON	OH	272	A	72.10	0.00	261.3	26.61 dB
WRVB	MARIETTA	OH	271	B1	114.44	0.00	97.5	28.56 dB

COMPLIANCE, 74.1204

Exhibit B demonstrates compliance with 74.1204 contour protections to the closest pertinent facilities. There is no overlap to any co-channel, first, second or 3rd adjacent facilities.

COMPLIANCE, 74.1233

Because the channel change to 269 is 53 channels from 216, and as demonstrated in Exhibit C, the proposed 60dBu contour provides 1mV/m to some portion of the currently authorized 1mV/m service area, the proposed changes are considered minor based upon 74.1233(a)(1)(i). Distance to Contour tables are shown in Exhibit F.

COMPLIANCE, 74.1235(b)(1)

Exhibit D demonstrates compliance with 74.1235(b)(1) governing the use of a translator other than as a fill-in facility. W216CN operates outside of the protected 60dBu contour of its primary station, WUFM, Channel 204B, Facility ID 20758. W216CN on 269D will be compliant with MERP power limits. Shown is the HAAT calculation from the FCC Website along the 12 required radials and the attached spreadsheet demonstrates that the proposed directional antenna and MERP values will be compliant.

Environmental Exhibit

The proposed translator facility will utilize a directional antenna located on an existing tower (ASR 1039382), attached in Exhibit E. The attachment of the proposed translator antenna will not alter the existing tower structure for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106.

The proposed 269D facility will operate using an EPA type 2 antenna operating at 250 peak watts and 46m AGL. Based upon the FCC website "FM MODEL" the proposed antenna will generate 2.4μW/cm² which is 1.2% of the allowable MPE. Because the RF emission will be less than 5% of the allowable MPE facility will be in compliance with FCC guidelines and is excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307 and may be considered independently of other facilities operating at the tower site.

The proposed new FM translator along with other users at the site will maintain an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

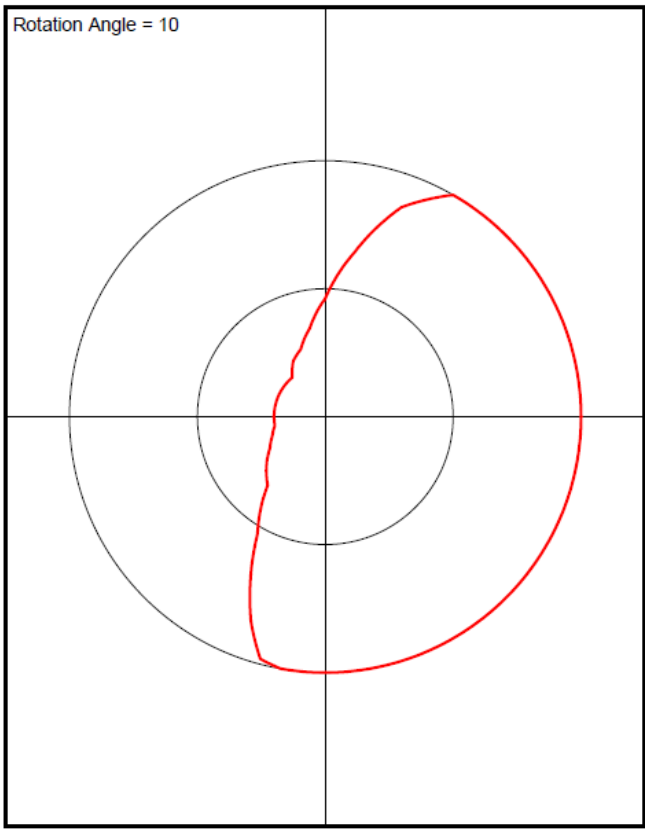
Respectfully Submitted

Bert Goldman
Goldman Engineering Mgmt.
560 Perkins Way
Auburn, CA 95603
(214) 395-5067
bert@bgoldman.net

EXHIBIT A- ANTENNA PATTERN

W216CN PROP Antenna Pattern

Post-Rotation Antenna Pattern....



Azimuth (deg)	Relative Field
0.0	0.462
5.0	0.556
10.0	0.65
15.0	0.76
20.0	0.87
25.0	0.935
30.0	1.0
35.0	1.0
40.0	1.0
45.0	1.0
50.0	1.0
55.0	1.0
60.0	1.0
65.0	1.0
70.0	1.0
75.0	1.0
80.0	1.0
85.0	1.0
90.0	1.0
95.0	1.0
100.0	1.0
105.0	1.0
110.0	1.0
115.0	1.0
120.0	1.0
125.0	1.0
130.0	1.0
135.0	1.0
140.0	1.0
145.0	1.0
150.0	1.0
155.0	1.0
160.0	1.0
165.0	1.0
170.0	1.0
175.0	1.0
180.0	1.0
185.0	1.0
190.0	1.0
195.0	0.98
200.0	0.85
205.0	0.69
210.0	0.53
215.0	0.44
220.0	0.35
225.0	0.325
230.0	0.3
235.0	0.275
240.0	0.25
245.0	0.235
250.0	0.22
255.0	0.21
260.0	0.2
265.0	0.2
270.0	0.2
275.0	0.2
280.0	0.2
285.0	0.2
290.0	0.2
295.0	0.2
300.0	0.2
305.0	0.2
310.0	0.2
315.0	0.2
320.0	0.2
325.0	0.225
330.0	0.25
335.0	0.265
340.0	0.28
345.0	0.315
350.0	0.35
355.0	0.406

EXHIBIT B- 74.1204 Compliance Contour Protection

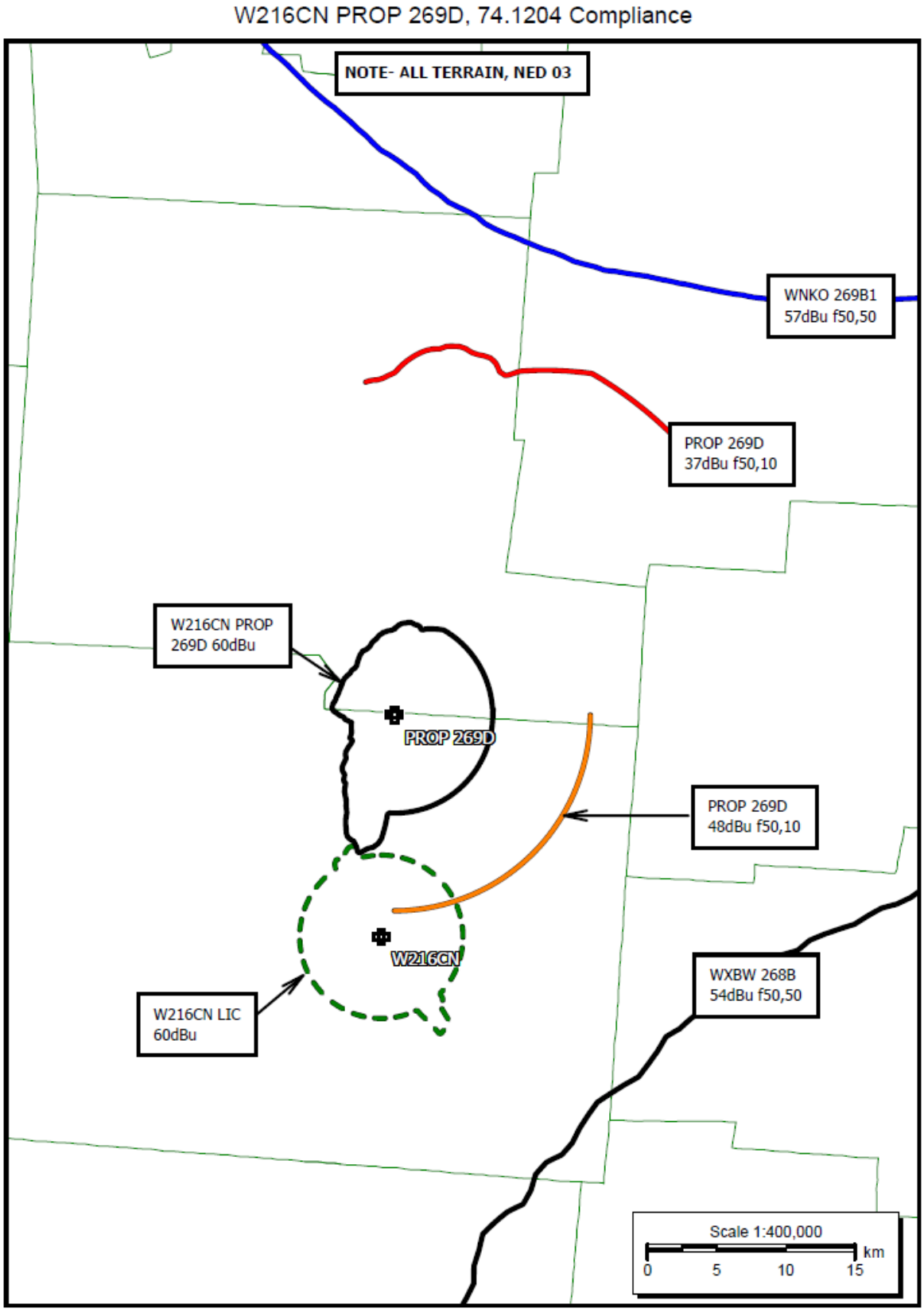


EXHIBIT C- 74.1233 Service Compliance

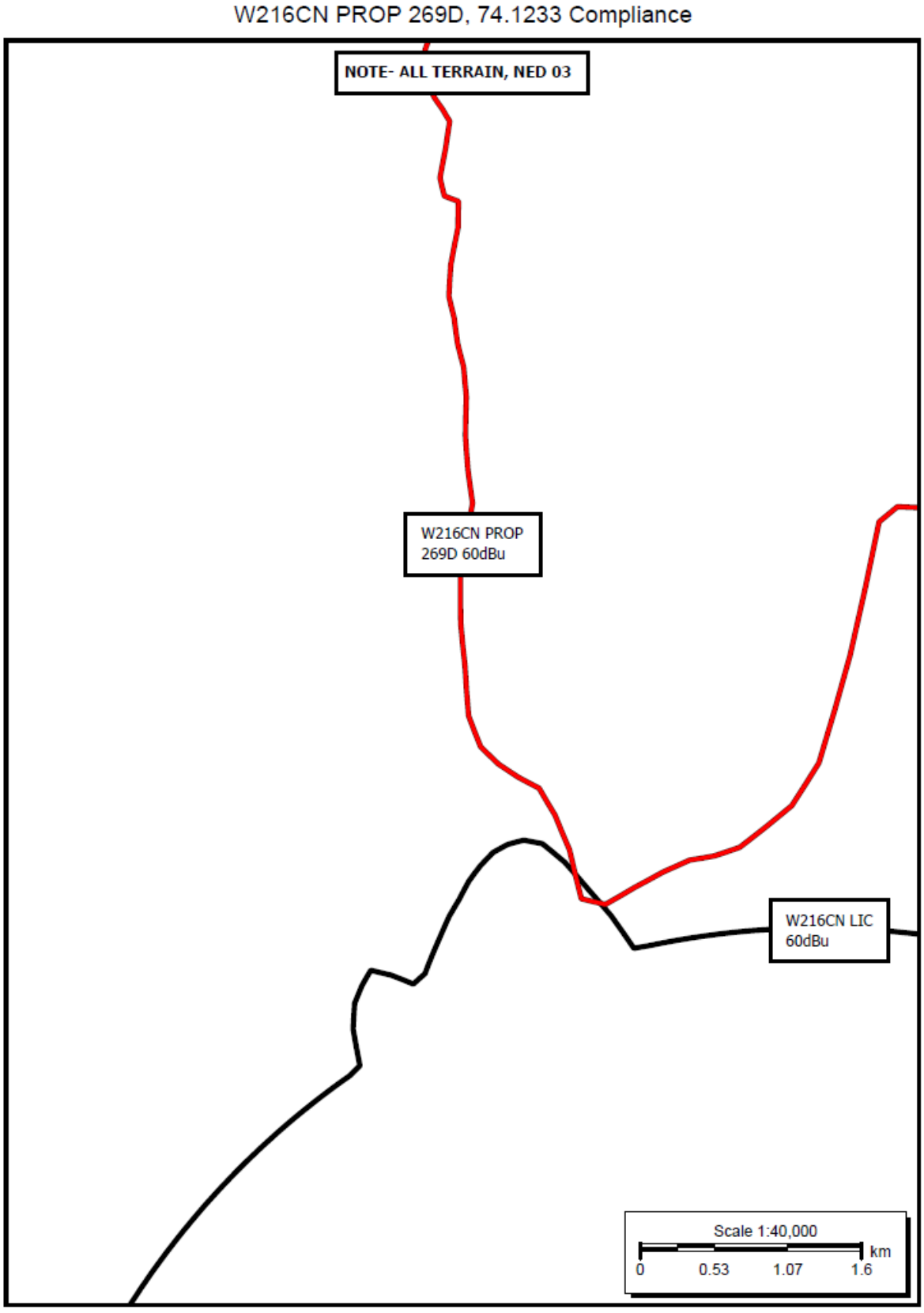


EXHIBIT D- MERP Compliance 74.1235(b)(1)

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **39° 27' 56"** North
Longitude **82° 56' 29"** West (NAD 83)

These coordinates convert to NAD 27 coordinates of
39° 27' 55.78", North, 82° 56' 29.36" West (NAD 27).

Height of antenna radiation center above mean sea level: **266** meters AMSL

Number of Evenly Spaced Radials = **12** 0° is referenced to True North

Results

Calculated HAAT = **31 meters**

Antenna Height Above Average Terrain calculated
using FCC 30 second terrain database (continental USA only)

Individual "Radial HAAT" Values, in meters

0°	56.0 m
30°	23.0 m
60°	11.6 m
90°	23.7 m
120°	-10.9 m
150°	4.9 m
180°	26.0 m
210°	49.2 m
240°	29.2 m
270°	45.7 m
300°	59.1 m
330°	56.9 m

MERP Calculation

Azimuth (deg)	"HAAT (m)"	Calculated FIELD	Calculated ERP	MAX ERP (74.1235(b)(1)
0	56	0.462	53	80
30	23	1	250	250
60	11.6	1	250	250
90	23.7	1	250	250
120	-10.9	1	250	250
150	4.9	1	250	250
180	26	1	250	250
210	49.2	0.53	70	80
240	29.2	0.25	16	170
270	45.7	0.2	10	120
300	59.1	0.2	10	55
330	56.9	0.25	16	80

74.1235(b)(1) MERP LIMITS	
<32m HAAT	250
33-39m HAAT	170
40-47m HAAT	120
48-57m HAAT	80
58-68m HAAT	55

EXHIBIT E- ASR

Registration 1039382

Map Registration

Registration Detail			
Reg Number	1039382	Status	Constructed
File Number	A1156008	Constructed	01/01/1997
EMI	No	Dismantled	
NEPA	No		

Antenna Structure			
Structure Type	LTOWER - Lattice Tower		
Location (in NAD83 Coordinates)			
Lat/Long	39-27-56.0 N 082-56-29.0 W	Address	2249 BLACKWATER RD (307904)
City, State	CHILICOTHE , OH		
Zip	45601	County	ROSS
Center of AM Array		Position of Tower in Array	

Heights (meters)	
Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
220.1	71.3
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
291.4	67.4

Painting and Lighting Specifications
FAA Chapters 4, 8, 13 Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification			
FAA Study	2013-AGL-4177-OE	FAA Issue Date	05/16/2013

Owner & Contact Information			
FRN	0011498342	Owner Entity Type	Limited Liability Company
Assignor FRN	0014350276	Assignor ID	L00132178

Owner	
American Towers, LLC Attention To: Regulatory Team FAA/FCC 10 Presidential Way Woburn , MA 01801	P: (781)926-4500 F: E: faa-fcc@americantower.com

Contact	
Attention To: Regulatory Team FAA/FCC 10 Presidential Way Woburn , MA 01801	P: (781)926-4500 F: E: faa-fcc@americantower.com

Last Action Status			
Status	Constructed	Received	02/07/2020
Purpose	Change Owner	Entered	02/07/2020
Mode	Interactive		

EXHIBIT F- Licensed Vs. Proposed 60dBu DTC Tables- NED 03 Terrain

W216CN PROPOSED (269D) 120-250 deg T

Distance to Contour Report

Type of contour: FCC
Location Variability: 50.0 %
Time Variability: 50.0 %
# of Radials Calculated: 360
FCC Matching HAAT Calculation Used
Field Strength: 60.00 dBuV/m

Primary Terrain: NED 3 Second US Terrain
Secondary Terrain: FCC 30 Second US Database

Transmitter Information:

Call Letters: W216CN PROP 269D
Latitude: 39-27-56 N
Longitude: 082-56-29 W
ERP: 0.25 kW
Channel: 269
Frequency: 101.7 MHz
AMSL Height: 266.1 m
Elevation: 220.1 m
Horiz. Antenna Pattern: Directional
Vert. Elevation Pattern: No

Azimuth (deg)	Distance (km)
120.0	7.09
121.0	7.09
122.0	7.09
123.0	7.09
124.0	7.09
125.0	7.09
126.0	7.09
127.0	7.09
128.0	7.09
129.0	7.09
130.0	7.09
131.0	7.09
132.0	7.09
133.0	7.09
134.0	7.09
135.0	7.09
136.0	7.09
137.0	7.09
138.0	7.09
139.0	7.09
140.0	7.09
141.0	7.09
142.0	7.09
143.0	7.09
144.0	7.09
145.0	7.09
146.0	7.09

147.0	7.09
148.0	7.09
149.0	7.09
150.0	7.09
151.0	7.09
152.0	7.09
153.0	7.09
154.0	7.09
155.0	7.09
156.0	7.09
157.0	7.09
158.0	7.09
159.0	7.09
160.0	7.09
161.0	7.09
162.0	7.09
163.0	7.09
164.0	7.09
165.0	7.09
166.0	7.09
167.0	7.09
168.0	7.09
169.0	7.09
170.0	7.09
171.0	7.09
172.0	7.09
173.0	7.09
174.0	7.09
175.0	7.09
176.0	7.09
177.0	7.09
178.0	7.09
179.0	7.09
180.0	7.09
181.0	7.09
182.0	7.09
183.0	7.09
184.0	7.21
185.0	8.19
186.0	8.98
187.0	9.31
188.0	9.49
189.0	9.66
190.0	9.76
191.0	9.82
192.0	9.94
193.0	10.09
194.0	10.26
195.0	10.27
196.0	9.95
197.0	9.74
198.0	9.59
199.0	9.56
200.0	9.52
201.0	9.44
202.0	9.27
203.0	8.95
204.0	8.67
205.0	8.35
206.0	7.85
207.0	7.65
208.0	7.44
209.0	7.19

210.0	7.01
211.0	6.89
212.0	6.74
213.0	6.63
214.0	6.44
215.0	6.18
216.0	6.03
217.0	6.06
218.0	5.97
219.0	5.78
220.0	5.61
221.0	5.58
222.0	5.55
223.0	5.52
224.0	5.43
225.0	5.35
226.0	5.16
227.0	4.92
228.0	4.73
229.0	4.64
230.0	4.63
231.0	4.56
232.0	4.50
233.0	4.40
234.0	4.23
235.0	4.07
236.0	3.89
237.0	3.72
238.0	3.59
239.0	3.56
240.0	3.57
241.0	3.59
242.0	3.63
243.0	3.62
244.0	3.56
245.0	3.48
246.0	3.44
247.0	3.38
248.0	3.35
249.0	3.33
250.0	3.31

W216CN Licensed 320 – 30 deg T

Distance to Contour Report

Type of contour: FCC
Location Variability: 50.0 %
Time Variability: 50.0 %
# of Radials Calculated: 360
FCC Matching HAAT Calculation Used
Field Strength: 60.00 dBuV/m

Primary Terrain: NED 3 Second US Terrain
Secondary Terrain: FCC 30 Second US Database

--
Transmitter Information:

Call Letters: W216CN
File Number: 0000125216
Latitude: 39-19-16.20 N
Longitude: 082-57-08.60 W
ERP: 0.12 kW
Channel: 216
Frequency: 91.1 MHz
AMSL Height: 237.0 m
Elevation: 184.0 m
Horiz. Antenna Pattern: Omni
Vert. Elevation Pattern: No
--

Azimuth (deg)	Distance (km)
320.0	5.90
321.0	5.90
322.0	5.90
323.0	5.90
324.0	5.90
325.0	5.90
326.0	5.92
327.0	6.17
328.0	6.32
329.0	6.40
330.0	6.46
331.0	6.36
332.0	6.23
333.0	6.26
334.0	6.35
335.0	6.45
336.0	6.55
337.0	6.64
338.0	6.73
339.0	6.81
340.0	6.86
341.0	6.88
342.0	6.87
343.0	6.81
344.0	6.63
345.0	6.40
346.0	6.17
347.0	5.91
348.0	5.90
349.0	5.90

350.0	5.90
351.0	5.90
352.0	5.90
353.0	5.90
354.0	5.90
355.0	5.90
356.0	5.90
357.0	5.90
358.0	5.90
359.0	5.90
0.0	5.90
1.0	5.90
2.0	5.90
3.0	5.90
4.0	5.90
5.0	5.90
6.0	5.90
7.0	5.90
8.0	5.90
9.0	5.90
10.0	5.90
11.0	5.90
12.0	5.90
13.0	5.90
14.0	5.90
15.0	5.90
16.0	5.90
17.0	5.90
18.0	5.90
19.0	5.90
20.0	5.90
21.0	5.90
22.0	5.90
23.0	5.90
24.0	5.90
25.0	5.90
26.0	5.90
27.0	5.90
28.0	5.90
29.0	5.90
30.0	5.90