

**MINOR CHANGE APPLICATION  
W236CF, Homewood, IL**

December, 2015

**TECHNICAL STATEMENT**

This technical statement and attached exhibits have been prepared on behalf of Windy City Broadcasting, LLC (“Windy City”), Permittee of translator station W236CF, Facility identifier 140658. The applicant proposes to modify construction permit BNPFT-20130827AEW to modify the antenna pattern and increase power to 150 watts ERP. This translator will rebroadcast Facility ID 6377, WTMX (FM), Skokie, IL as a fill-in translator in compliance with 47CFR 74.1203. The translator community of license will remain Homewood, IL. The proposed operation is MX to the original W236CF permit and the 60dBu contours intersect since there is no change in tower site proposed. Windy City has received permission from the licensee of WTMX (FM) to rebroadcast that station’s programming.

**Facilities Proposed**

Location (NAD27)	41° 37’ 15” N Latitude, 87° 40’ 55” W Longitude
Channel	236D (95.1MHz)
Tower Overall AGL Height-	135m
Tower ASR (Attached Exhibit D)	1056805
Proposed Antenna	Kathrein Scala Dual HDCA-10 antennas 32 deg & 100deg
Antenna AGL Height-	125m
Site AMSL Height-	184m
COR AMSL Height	309m
HAAT	118m
ERP	150w DIRECTIONAL (SEE EXHIBIT A)

## Interference Study

ComStudy 2.2 search of channel 236 (95.1 MHz Class D) at 41-37-15.0 N, 87-40-55.0 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
WLS-FM	CHICAGO	IL 234 B	28.92	0.00	7.6	-18.61 dB exhibit C
WEBG	CHICAGO	IL 238 B	31.27	0.00	9.0	-17.42 dB exhibit D
WIIL	UNION GROVE	WI 236 B	104.99	0.00	350.5	-0.38 dB exhibit E
W236CG	BOWLINGBROOK	IL 236 D	29.30	0.00	288.1	3.34 dB exhibit F
WCFS-FM	ELMWOOD PARK	IL 290 B	28.92	15.00	7.6	13.9
WVUR-FM	VALPARAISO	IN 236 D	56.15	0.00	107.7	14.72 dB
WFAV	KANKAKEE	IL 236 A	60.66	0.00	185.9	15.48 dB
W236BD	MICHIGAN CITY	IN 236 D	73.18	0.00	85.5	17.68 dB
WIIL	UNION GROVE	WI 236 B	104.99	0.00	350.5	19.98 dB
WCFS-FM	ELMWOOD PARK	IL 290 B	35.70	15.00	350.8	20.7
WJDK-FM	SENECA	IL 239 A	84.48	0.00	238.4	28.16 dB
WRIT-FM	MILWAUKEE	WI 239 B	164.32	0.00	353.4	29.82 dB
WKTJ	MILWAUKEE	WI 233 B	164.35	0.00	353.8	31.58 dB

CDBS Data as of 12/15/2015

### COMPLIANCE, 74.1201(g), 74.1203(d), 74.1233(a)(1), and 74.1204(d)

Exhibit B demonstrates compliance with 74.1201(g) governing the use of a translator as a fill-in for an FM station. The 60dBu contour of the proposed W236CF will be completely contained within the 1mV/m contour of WTMX (FM).

As demonstrated in Exhibits C and D, there will be no location where the signal of W236CF will be in excess of 40dBu above the WLS-FM or WEBG 2<sup>nd</sup> adjacent signals.

Exhibits E and F demonstrate compliance with 74.1204(d). There are no impermissible contour overlaps to any other facilities. There is no interference shown to WIIL (FM) over land.

## Environmental Exhibit

The proposed W236CF facility as proposed on channel 236D will utilize a directional antenna located on an existing tower owned by American Tower Corp. ASR 1056805). The ASR for the tower is attached as Exhibit E. The RF density near the tower was calculated using a worst-case dipole antenna setting at 150 watts horizontal and vertical.

Using the FCC program "FM Model for Windows", it was calculated that the proposed antenna contributes approximately  $0.4 \mu\text{W}/\text{cm}^2$  or 0.2% of the total allowable  $200 \mu\text{W}/\text{cm}^2$ . The maximum was found to be 33 meters from the base of the tower.

There are no non-excluded RF sources on the tower.

The proposed W236CF operation is categorically excluded from further environmental review under §1.1306 of the FCC rules and regulations.

Respectfully Submitted



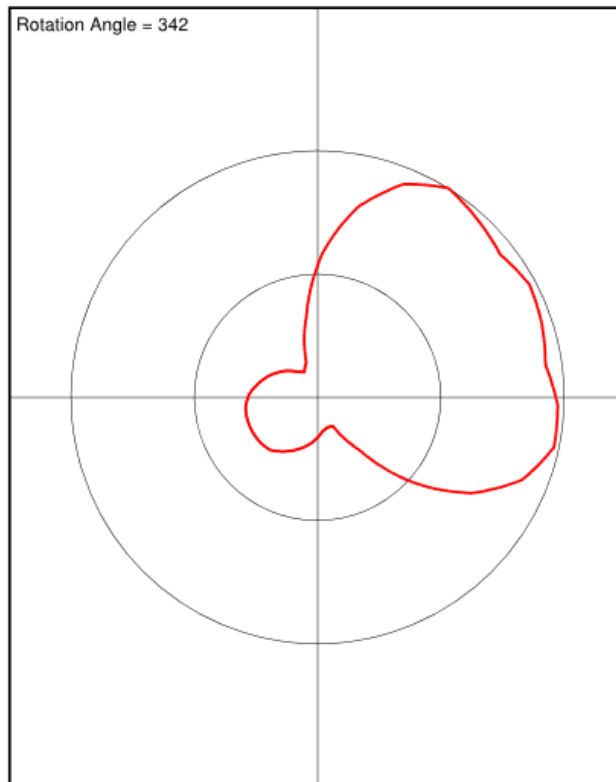
Bert Goldman  
Goldman Engineering Mgmt.  
1511 Radcliffe Way  
Auburn, CA 95603  
(214) 395-5067  
[bert@bgoldman.net](mailto:bert@bgoldman.net)

# EXHIBIT A: Dual HDCA-10 Antenna

## W236CF PROP ANT PAT

Pre-Rotation Antenna Pattern....

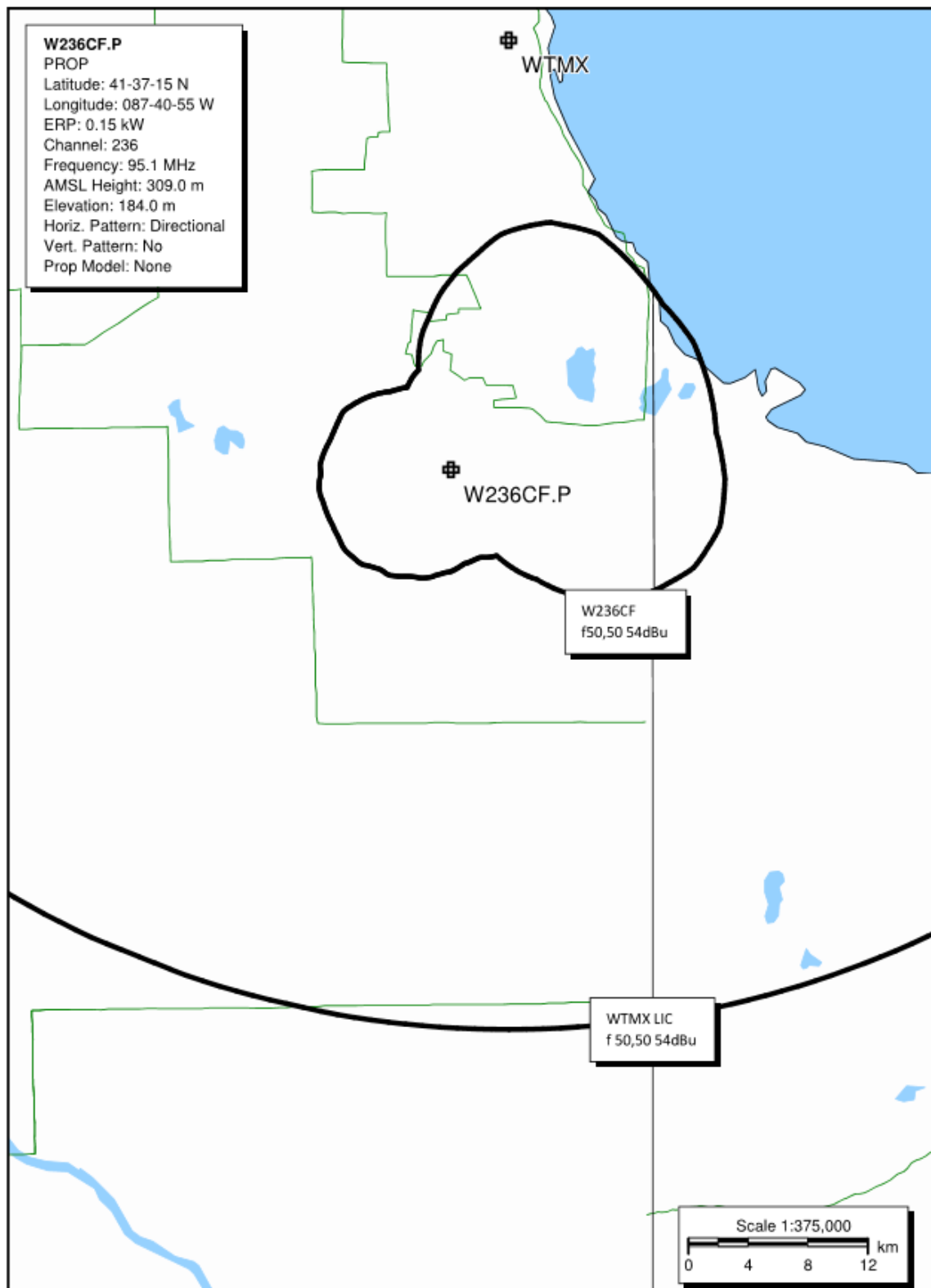
Azimuth (deg)	Relative Field
0.0	0.148
5.0	0.239
10.0	0.33
15.0	0.458
20.0	0.586
25.0	0.6875
30.0	0.789
35.0	0.8605
40.0	0.932
45.0	0.966
50.0	1.0
55.0	0.9845
60.0	0.969
65.0	0.9545
70.0	0.94
75.0	0.9565
80.0	0.973
85.0	0.9645
90.0	0.956
95.0	0.9445
100.0	0.933
105.0	0.9535
110.0	0.974
115.0	0.9765
120.0	0.979
125.0	0.9365
130.0	0.894
135.0	0.8135
140.0	0.733
145.0	0.6225
150.0	0.512
155.0	0.389
160.0	0.266
165.0	0.199
170.0	0.132
175.0	0.13
180.0	0.128
185.0	0.134
190.0	0.14
195.0	0.155
200.0	0.17
205.0	0.185
210.0	0.2
215.0	0.2145
220.0	0.229
225.0	0.244
230.0	0.259
235.0	0.2735
240.0	0.288
245.0	0.292
250.0	0.296
255.0	0.2975
260.0	0.299
265.0	0.299
270.0	0.299
275.0	0.297
280.0	0.295
285.0	0.287
290.0	0.279
295.0	0.2645
300.0	0.25
305.0	0.2355
310.0	0.221
315.0	0.2055



320.0	0.19
325.0	0.1755
330.0	0.161
335.0	0.1455
340.0	0.13
345.0	0.1225
350.0	0.115
355.0	0.1315

## EXHIBIT B-

### W236CF (PROPOSED) Compliance with 74.1201(g) to WTMX (FM)



## EXHIBIT C 2<sup>nd</sup> Adjacent Interference Compliance to WLS-FM 234B

W236CF Homewood, IL  
 74.1204(d) Showing  
 Translator or LPFM Maximum Licensed ERP = 0.15  
 Translator or LPFM Antenna Height AG = 125 Meters  
 W236CF Antenna Model = CL-FM\_0098-MHZ\_VPOL\_000DT

Protected Station's Contour = 71.8297 dBu  
 Translator's or LPFM's full Interference contour 111.8297

Review Azimuth = 0 Degrees True  
 Relative Field on the horizon at Review Azimuth = 1.000  
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.15 kW  
 Distance between stations = 28.9 km  
 Protected Station= WLS-FM, 4.4 kW, 649 M Meters COR AMSL

Depression IX Angle From Horizon(Deg) (m)	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 Above Ground
00.00	1.0	1.0	0.1500	220.0699	220.0699	125.000
05.00	0.98	1.0	0.1441	215.6685	214.8478	106.203
10.00	0.95	1.0	0.1354	209.0664	205.8902	088.696
15.00	0.895	1.0	0.1202	196.9625	190.2512	074.022
20.00	0.82	1.0	0.1009	180.4573	169.5744	063.280
25.00	0.735	1.0	0.0810	161.7514	146.5965	056.641
30.00	0.645	1.0	0.0624	141.9451	122.9280	054.027
35.00	0.563	1.0	0.0475	123.7893	101.4023	053.997
40.00	0.47	1.0	0.0331	103.4328	079.2342	058.515
45.00	0.36	1.0	0.0194	079.2252	056.0207	068.979
50.00	0.25	1.0	0.0094	055.0175	035.3645	082.854
55.00	0.155	1.0	0.0036	034.1108	019.5652	097.058
60.00	0.085	1.0	0.0011	018.7059	009.3530	108.800
65.00	0.045	1.0	0.0003	009.9031	004.1853	116.025
70.00	0.02	1.0	0.0001	004.4014	001.5054	120.864
75.00	0.01	1.0	0.0000	002.2007	000.5696	122.874
80.00	0.01	1.0	0.0000	002.2007	000.3821	122.833
85.00	0.01	1.0	0.0000	002.2007	000.1918	122.808
90.00	0.01	1.0	0.0000	002.2007	000.0000	122.799

## EXHIBIT D 2<sup>nd</sup> Adjacent Interference Compliance to WEBG (FM) 238B

W236CF Homewood, IL

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.15

Translator or LPFM Antenna Height AG = 125 Meters

W236CF Antenna Model = CL-FM\_0098-MHZ\_VPOL\_000DT

Protected Station's Contour = 70.37797 dBu

Translator's or LPFM's full Interference contour 110.37797

Review Azimuth = 0 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.15 kW

Distance between stations = 31.3 km

Protected Station= WEBG, 5.3 kW, 606 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	0.1500	260.1041	260.1041	125.000
05.00	0.98	1.0	0.1441	254.9020	253.9320	102.784
10.00	0.95	1.0	0.1354	247.0989	243.3449	082.092
15.00	0.895	1.0	0.1202	232.7931	224.8609	064.749
20.00	0.82	1.0	0.1009	213.2853	200.4226	052.052
25.00	0.735	1.0	0.0810	191.1765	173.2647	044.205
30.00	0.645	1.0	0.0624	167.7671	145.2906	041.116
35.00	0.563	1.0	0.0475	146.3085	119.8489	041.081
40.00	0.47	1.0	0.0331	122.2489	093.6481	046.420
45.00	0.36	1.0	0.0194	093.6375	066.2117	058.788
50.00	0.25	1.0	0.0094	065.0260	041.7979	075.187
55.00	0.155	1.0	0.0036	040.3161	023.1244	091.975
60.00	0.085	1.0	0.0011	022.1088	011.0544	105.853
65.00	0.045	1.0	0.0003	011.7047	004.9466	114.392
70.00	0.02	1.0	0.0001	005.2021	001.7792	120.112
75.00	0.01	1.0	0.0000	002.6010	000.6732	122.488
80.00	0.01	1.0	0.0000	002.6010	000.4517	122.438
85.00	0.01	1.0	0.0000	002.6010	000.2267	122.409
90.00	0.01	1.0	0.0000	002.6010	000.0000	122.399

## EXHIBIT E- 74.1204(d) Compliance to WIIL

### Proposed W236CF, 150 watts, 125m AGL Interference to WIIL (Co-channel)

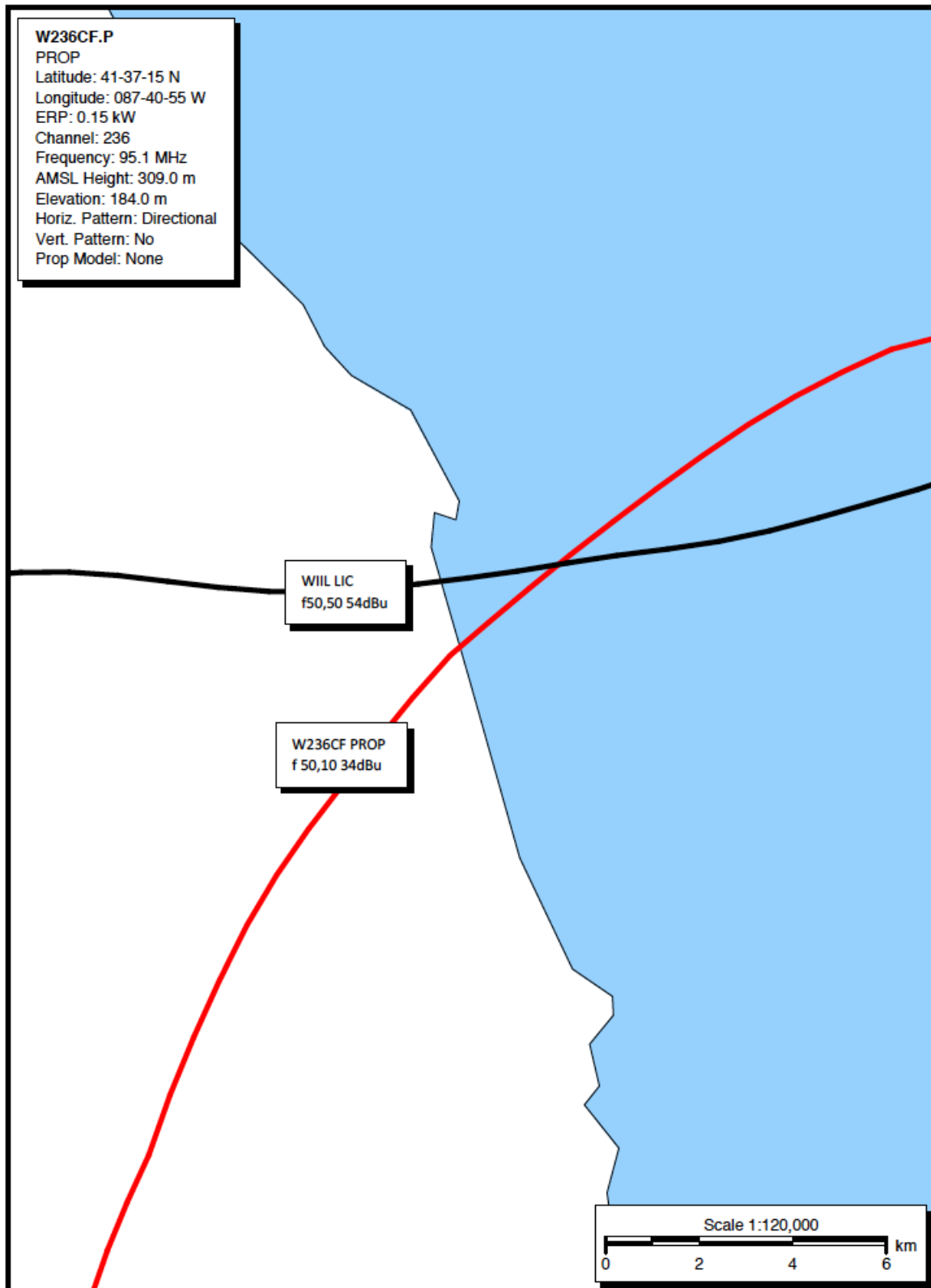
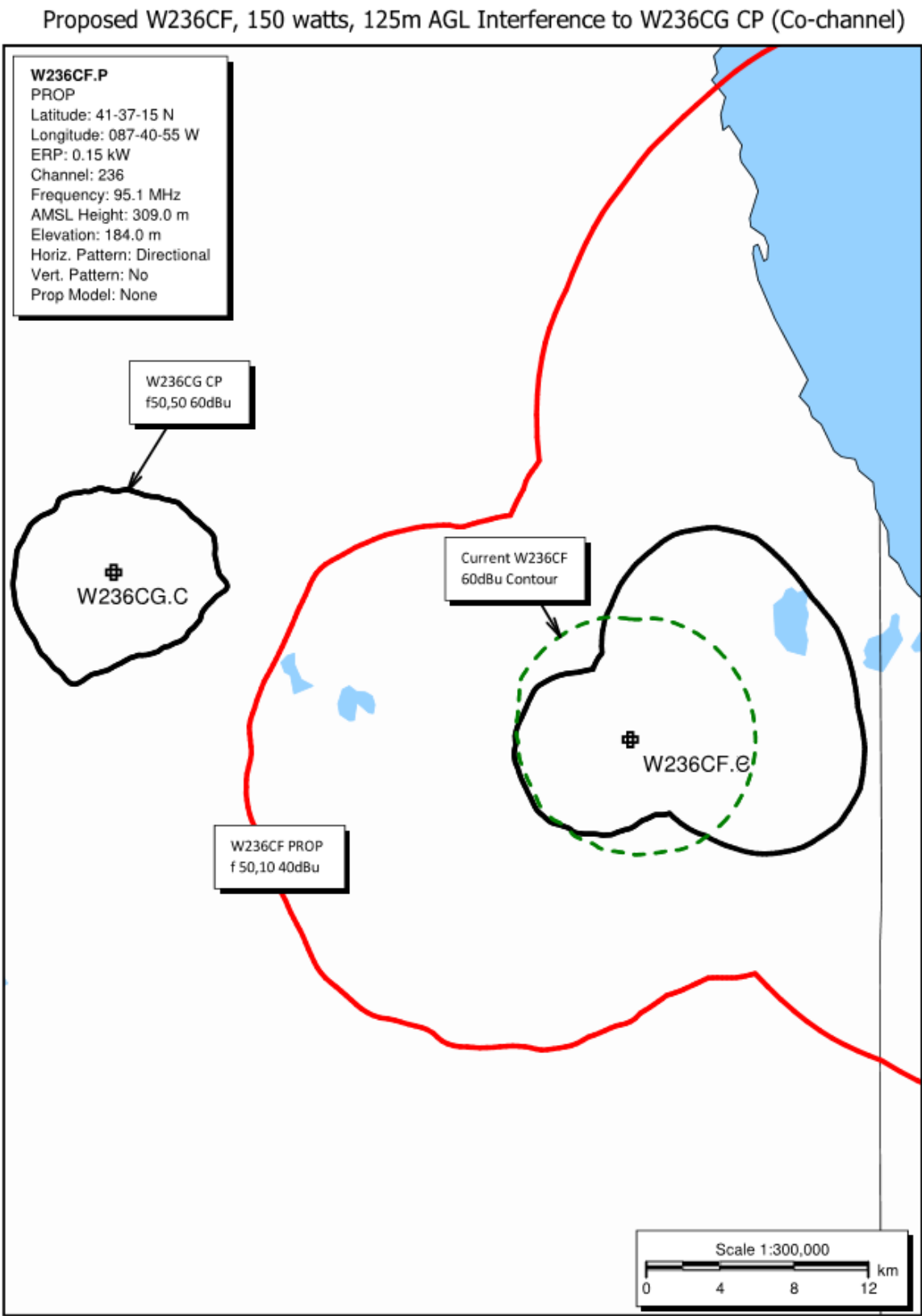




EXHIBIT F- 74.1204(d) Compliance to W236CG (CP), 74.1233(a)(1) Compliance



## EXHIBIT E- ANTENNA STRUCTURE REGISTRATION

### Registration 1056805

 [Map Registration](#)

#### Registration Detail

Reg Number	1056805	Status	Constructed
File Number	A0101405	Constructed	10/01/1999
EMI	No	Dismantled	
NEPA	No		

#### Antenna Structure

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

#### Location (in NAD83 Coordinates)

Lat/Long	41-37-15.0 N 087-40-55.0 W	Address	15000 S ROCKWELL
City, State	POSEN , IL		
Zip	60426	County	COOK
Center of AM Array		Position of Tower in Array	

#### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
184.0	135.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
319.0	135.0

#### Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13

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

#### FAA Notification

FAA Study	98-AGL-4567-OE	FAA Issue Date	09/21/1998
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#### Owner & Contact Information

FRN	0003766813	Owner Entity Type
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#### Owner

CHICAGO TOWER LEASING CORP	P: (847)823-7713
Attention To: STANLEY R STANN	F:
105 MURPHY LAKE RD	E:
PARK RIDGE , IL 60068	

#### Contact

P:  
F:  
E:

"

#### Last Action Status

Status	Constructed	Received	10/25/1999
Purpose	Notification	Entered	10/29/1999
Mode	Mail In (Manual)		

(ASR 1056805 Cont'd)

**Related Applications**

10/25/1999      A0101405 - Notification (NT)  
09/22/1998      A0066778 - New (NE)

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**Comments**

**Comments**

None

»

**History**

<b>Date</b>	<b>Event</b>
10/26/2007	FRN Disassociation Letter sent
10/25/2007	FRN association email sent: CORES email
10/29/1999	Construction Notification Received

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**Automated Letters**

10/26/2007      FRN Disassociation, Reference 585213

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