

**W252DC
RESTON, VA
MINOR MODIFICATIONS**

This application requests a minor amendment to W252DC as constructed and for which a form 350 has been filed (BLFT-20160113ABB). It will serve as a fill in for WTOP-FM'S HD3.

Allocation discussion:

All exhibits utilize the FCC 30 second terrain database.

- E1 Channel study
- E1A WMZQ-FM interference analysis
- E1B WIYY interference analysis
- E1C Aerial and street views
- E1D DA
- E2 60 dBu and 54 dBu contours

A channel study is included as E1 demonstrating compliance with §74.1204. A plot of the proposed 54 dBu is provided as E2 showing that it is entirely contained within the WTOP-FM 54 dBu contour and that the proposed 60 dBu overlaps the existing 60 dBu .

WMZQ-FM analysis:

The proposed facility is located inside the WMZQ-FM 2nd adjacent channel 54 dBu. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The WMZQ-FM contour at the site is 88.26 dBu and the proposed 252DC interference contour is 128.26 dBu (+40) which clears the ground by at least 184.8 meters (see E1A).

WIYY analysis:

The proposed facility is located inside the WIYY 250B 2nd adjacent channel 54 dBu. Therefore, an interference analysis has been conducted based on the U/D ratio of +40 dB at the proposed site. The WIYY contour at the site is 57 dBu dBu and the proposed 252DC interference

ANDERSON ASSOCIATES

contour is 97 dBu (+40) (see E1B). The interference clears the ground by at least 71.07 meters within the first 100 meters (see E1C). The tallest building within that zone is 15 stories located on Westbard (street view included in E1C). Assuming a worst case 12 feet per story that leaves a clearance of 16.2 meters above the building.

The tallest building within the area between 100 meters and the outer edge of the 97 dBu interfering contour is 20 stories at 4515 Willard (see E1C for street view). The minimum clearance in this zone is 76.8 meters or 3.6 meters above the tallest 20 story building assuming a worst case 12 feet per floor. Furthermore, the interference contour is at least 105 meters above ground in the area where the 20 story is located (1.27 km) and is at least 88.9 meters in the area between 0.79 and 1.4 km where other taller buildings are located.

Clearly, these interference contours 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 0.220 kW facility will utilize a PSI FML-6 0.75 wavelength spaced, circularly polarized antenna. The RF contribution of the proposed translator was calculated using an F factor of 1.0 and the formula included to be 0.4 $\mu\text{Watts}/\text{cm}^2$ or 0.5% of the maximum permissible 200 microwatts/cm² exposure for general population/uncontrolled exposure, and well below 5% of that limit which requires consideration. The proposed translator clearly complies with Commission RF radiation limits.

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

E1 CHANNEL STUDY

REFERENCE
38 57 51.0 N.
77 06 16.0 W.

CH# 252D - 98.3 MHz, Pwr= 0.2 kW DA, HAAT= 188.6 M, COR= 261 M
Average Protected F(50-50)= 16.99 km
Standard Directional

DISPLAY DATES
DATA 01-17-16
SEARCH 01-18-16

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
254B Washington	WMZQ-FM	LIC _CX DC	224.2 44.1	11.96 BMLH20060228AMC	38 53 13.0 77 12 03.0	50.000 149	6.1 232	65.8 Amfm Radio Licenses, L.L.c	-10.1*	-55.6* (1)
252D Reston	W252DC	CP _C_ VA	283.4 103.3	16.68 BMPFT20131121BDM	38 59 56.0 77 17 32.0	0.250	42.1 150	12.2 Reston Translator, Llc	-42.9*	-52.8*
252A Stephens City	AL2329	RSV-A _ VA	282.4 101.8	85.59 RM10627	39 07 30.0 78 04 26.0	6.000 100	92.1 297	32.4	-24.3*	-2.8
252A Mechanicsville	WSMD-FM	LIC _CN MD	154.9 335.1	67.54 BLH19880913KA	38 24 49.0 76 46 31.0	3.000 100	73.0 125	22.5 Somar Communications, Inc.	-17.4*	12.0
250B Baltimore	WIYY	LIC _CN MD	43.4 223.7	56.80 BLH19880914KA	39 20 05.0 76 39 03.0	13.500 288	5.3 373	63.4 Hearst Stations Inc.	35.4	-8.3* (2)
252A Stephens City	WKSI-FM	LIC _CX VA	283.7 102.9	102.91 BLH20040920ADJ	39 10 38.0 78 15 53.0	1.750 188	88.8 468	32.7 Amfm Radio Licenses, L.L.c	-3.7	14.3
253B York-hanover	WYCR	LIC _CX PA	7.6 187.7	100.19 BLH20110112ACQ	39 51 26.0 76 56 54.0	10.500 283	69.8 462	59.8 Radio Hanover, Inc.	14.5	6.5
252D Edgemere	W252BR	LIC _V_ MD	61.9 242.3	64.77 BLFT20070808ADV	39 14 13.0 76 26 28.0	0.005 3	8.5 7	2.7 Hope Christian Church Of M	39.2	8.3
252D Chestertown	W252BR	CP _C_ MD	71.3 251.9	92.35 BPFT20140922AAO	39 13 35.0 76 05 20.0	0.250	35.8 73	10.5 Hope Christian Church Of M	38.9	26.4
251B Richmond	WTVR-FM	LIC _HN VA	191.9 11.7	158.73 BLH1944	37 34 00.0 77 28 36.0	50.000 256	90.6 307	75.2 Cc Licenses, Llc	51.9	51.2

Terrain database is FCC 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.
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 disproof of interference.
- (2) See E1B and E1C for disproof of interference.

E1A WMZQ 254B ANALYSIS

W252DC Reston, VA
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.2
 Translator or LPFM Antenna Height AG = 188 Meters
 W252DC Antenna Model = PSI-6 3/4 WAVE SPACED

Protected Station's Contour = 88.26024 dBu
 Translator's or LPFM's full Interference contour 128.26024

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.2 kW
 Distance between stations = 12.0 km
 Protected Station= WMZQ-F, 50 kW, 232 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	0.2000	038.3268	038.3268	188.000
05.00	0.768	1.0	0.1180	029.4350	029.3230	185.435
10.00	0.261	1.0	0.0136	010.0033	009.8513	186.263
15.00	0.14	1.0	0.0039	005.3658	005.1829	186.611
20.00	0.215	1.0	0.0092	008.2403	007.7433	185.182
25.00	0.054	1.0	0.0006	002.0696	001.8757	187.125
30.00	0.111	1.0	0.0025	004.2543	003.6843	185.873
35.00	0.135	1.0	0.0036	005.1741	004.2384	185.032
40.00	0.041	1.0	0.0003	001.5714	001.2038	186.990
45.00	0.065	1.0	0.0008	002.4912	001.7616	186.238
50.00	0.109	1.0	0.0024	004.1776	002.6853	184.800
55.00	0.085	1.0	0.0014	003.2578	001.8686	185.331
60.00	0.029	1.0	0.0002	001.1115	000.5557	187.037
65.00	0.021	1.0	0.0001	000.8049	000.3402	187.271
70.00	0.047	1.0	0.0004	001.8014	000.6161	186.307
75.00	0.05	1.0	0.0005	001.9163	000.4960	186.149
80.00	0.039	1.0	0.0003	001.4947	000.2596	186.528
85.00	0.02	1.0	0.0001	000.7665	000.0668	187.236
90.00	0.0	1.0	0.0000	000.0038	000.0000	187.996

E1B WIYY 250B ANALYSIS

W252DC Reston, VA
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.2
 Translator or LPFM Antenna Height AG = 188 Meters
 W252DC Antenna Model = PSI-6 3/4 WAVE SPACED

Protected Station's Contour = 57.00562 dBu
 Translator's or LPFM's full Interference contour 97.00562

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.2 kW
 Distance between stations = 56.8 km
 Protected Station= WIYY, 13.5 kW, 373 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	0.2000	1400.3416	1400.3416	188.000
01.00	0.99	1.0	0.1960	1386.3382	1386.1271	163.805
02.00	0.96	1.0	0.1843	1344.3279	1343.5090	141.084
03.00	0.912	1.0	0.1663	1277.1116	1275.3613	121.161
04.00	0.847	1.0	0.1435	1186.0894	1183.2001	105.263
05.00	0.768	1.0	0.1180	1075.4624	1071.3699	094.267
06.00	0.677	1.0	0.0917	948.0313	942.8378	088.904
07.00	0.577	1.0	0.0666	807.9971	801.9745	089.530
08.00	0.472	1.0	0.0446	660.9613	654.5288	096.012
09.00	0.365	1.0	0.0266	511.1247	504.8319	108.042
10.00	0.261	1.0	0.0136	365.4892	359.9366	124.533
11.00	0.161	1.0	0.0052	225.4550	221.3128	144.981
12.00	0.069	1.0	0.0010	096.6236	094.5121	167.911
13.00	0.013	1.0	0.0000	018.2044	017.7379	183.905
14.00	0.083	1.0	0.0014	116.2283	112.7759	159.882
15.00	0.14	1.0	0.0039	196.0478	189.3677	137.259
16.00	0.182	1.0	0.0066	254.8622	244.9892	117.750
17.00	0.21	1.0	0.0088	294.0717	281.2222	102.022
18.00	0.224	1.0	0.0100	313.6765	298.3241	091.069
19.00	0.226	1.0	0.0102	316.4772	299.2351	084.965
20.00	0.215	1.0	0.0092	301.0735	282.9165	085.027
21.00	0.195	1.0	0.0076	273.0666	254.9296	090.142
22.00	0.166	1.0	0.0055	232.4567	215.5301	100.920
23.00	0.132	1.0	0.0035	184.8451	170.1508	115.775
24.00	0.094	1.0	0.0018	131.6321	120.2519	134.460
25.00	0.054	1.0	0.0006	075.6184	068.5336	156.042
26.00	0.014	1.0	0.0000	019.6048	017.6207	179.406
27.00	0.023	1.0	0.0001	032.2079	028.6974	173.378
28.00	0.058	1.0	0.0007	081.2198	071.7128	149.870
29.00	0.087	1.0	0.0015	121.8297	106.5547	128.936
30.00	0.111	1.0	0.0025	155.4379	134.6132	110.281
31.00	0.128	1.0	0.0033	179.2437	153.6419	095.683
32.00	0.14	1.0	0.0039	196.0478	166.2580	084.110
33.00	0.144	1.0	0.0041	201.6492	169.1172	078.174
34.00	0.142	1.0	0.0040	198.8485	164.8529	076.805
35.00	0.135	1.0	0.0036	189.0461	154.8575	079.568
36.00	0.123	1.0	0.0030	172.2420	139.3467	086.759
37.00	0.106	1.0	0.0022	148.4362	118.5464	098.669
38.00	0.087	1.0	0.0015	121.8297	096.0031	112.994

**TALLEST
BUILDINGS
IN THIS AREA
WITH 88.9M
CLEARANCE.**

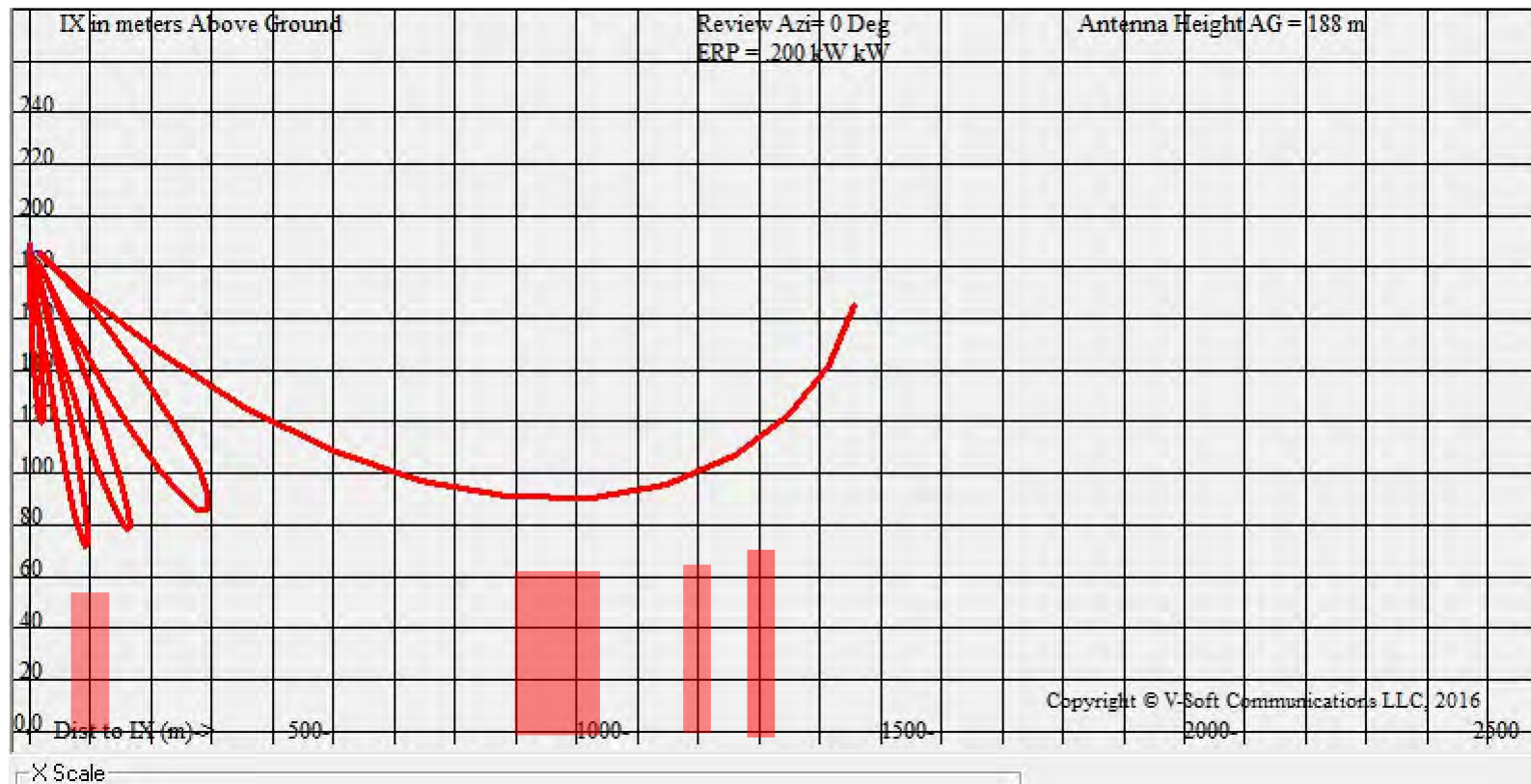
MIN. 100M+

E1B CONTINUED

39.00	0.065	1.0	0.0008	091.0222	070.7375	130.718
40.00	0.041	1.0	0.0003	057.4140	043.9817	151.095
41.00	0.018	1.0	0.0001	025.2061	019.0233	171.463
42.00	0.005	1.0	0.0000	007.0017	005.2033	183.315
43.00	0.027	1.0	0.0001	037.8092	027.6519	162.214
44.00	0.047	1.0	0.0004	065.8161	047.3441	142.280
45.00	0.065	1.0	0.0008	091.0222	064.3624	123.638
46.00	0.08	1.0	0.0013	112.0273	077.8207	107.414
47.00	0.092	1.0	0.0017	128.8314	087.8628	093.779
48.00	0.1	1.0	0.0020	140.0342	093.7011	083.934
49.00	0.106	1.0	0.0022	148.4362	097.3829	075.974
50.00	0.109	1.0	0.0024	152.6372	098.1133	071.073
51.00	0.108	1.0	0.0023	151.2369	095.1765	070.467
52.00	0.106	1.0	0.0022	148.4362	091.3865	071.031
53.00	0.1	1.0	0.0020	140.0342	084.2747	076.164
54.00	0.093	1.0	0.0017	130.2318	076.5483	082.640
55.00	0.085	1.0	0.0014	119.0290	068.2723	090.497
56.00	0.075	1.0	0.0011	105.0256	058.7296	100.930
57.00	0.064	1.0	0.0008	089.6219	048.8116	112.837
58.00	0.052	1.0	0.0005	072.8178	038.5875	126.247
59.00	0.04	1.0	0.0003	056.0137	028.8492	139.987
60.00	0.029	1.0	0.0002	040.6099	020.3050	152.831
61.00	0.017	1.0	0.0001	023.8058	011.5413	167.179
62.00	0.007	1.0	0.0000	009.8024	004.6019	179.345
63.00	0.003	1.0	0.0000	004.2010	001.9072	184.257
64.00	0.013	1.0	0.0000	018.2044	007.9803	171.638
65.00	0.021	1.0	0.0001	029.4072	012.4280	161.348
66.00	0.028	1.0	0.0002	039.2096	015.9480	152.180
67.00	0.035	1.0	0.0002	049.0120	019.1505	142.884
68.00	0.04	1.0	0.0003	056.0137	020.9831	136.065
69.00	0.044	1.0	0.0004	061.6150	022.0809	130.477
70.00	0.047	1.0	0.0004	065.8161	022.5104	126.153
71.00	0.05	1.0	0.0005	070.0171	022.7953	121.798
72.00	0.051	1.0	0.0005	071.4174	022.0692	120.078
73.00	0.052	1.0	0.0005	072.8178	021.2899	118.364
74.00	0.051	1.0	0.0005	071.4174	019.6853	119.349
75.00	0.05	1.0	0.0005	070.0171	018.1218	120.369
76.00	0.049	1.0	0.0005	068.6167	016.5999	121.421
77.00	0.047	1.0	0.0004	065.8161	014.8054	123.871
78.00	0.045	1.0	0.0004	063.0154	013.1016	126.362
79.00	0.042	1.0	0.0004	058.8143	011.2223	130.266
80.00	0.039	1.0	0.0003	054.6133	009.4835	134.216
81.00	0.035	1.0	0.0002	049.0120	007.6672	139.591
82.00	0.032	1.0	0.0002	044.8109	006.2365	143.625
83.00	0.028	1.0	0.0002	039.2096	004.7784	149.083
84.00	0.024	1.0	0.0001	033.6082	003.5130	154.576
85.00	0.02	1.0	0.0001	028.0068	002.4410	160.100
86.00	0.016	1.0	0.0001	022.4055	001.5629	165.649
87.00	0.012	1.0	0.0000	016.8041	000.8795	171.219
88.00	0.008	1.0	0.0000	011.2027	000.3910	176.804
89.00	0.004	1.0	0.0000	005.6014	000.0978	182.399
90.00	0.0	1.0	0.0000	000.1400	000.0000	187.860

**MINIMUM
CLEARANCE
IN FIRST 100M
ZONE = 70.47M**

E1C GRAPH OF 97 DBU INTERFERENCE CONTOUR



1

2

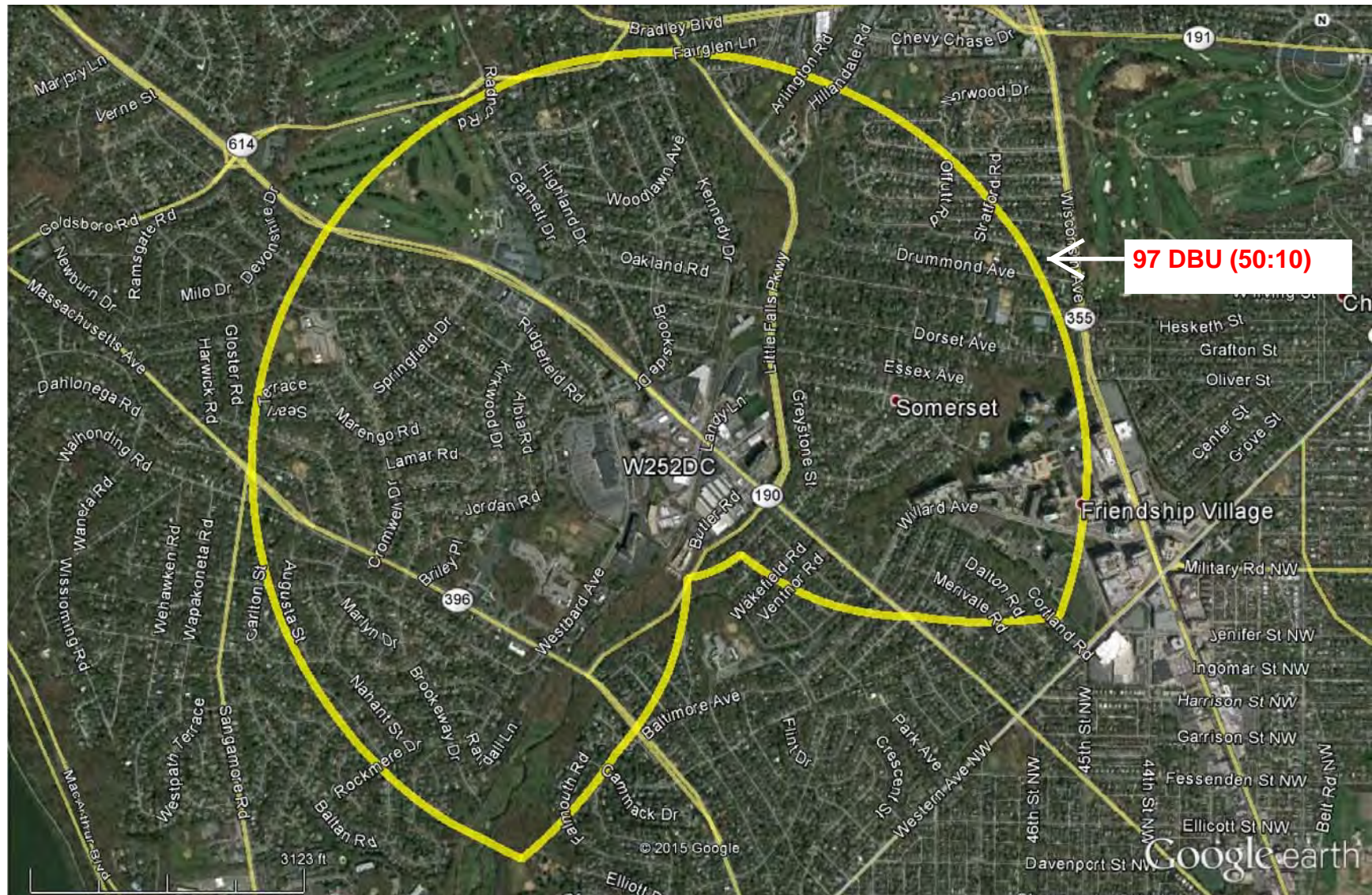
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4

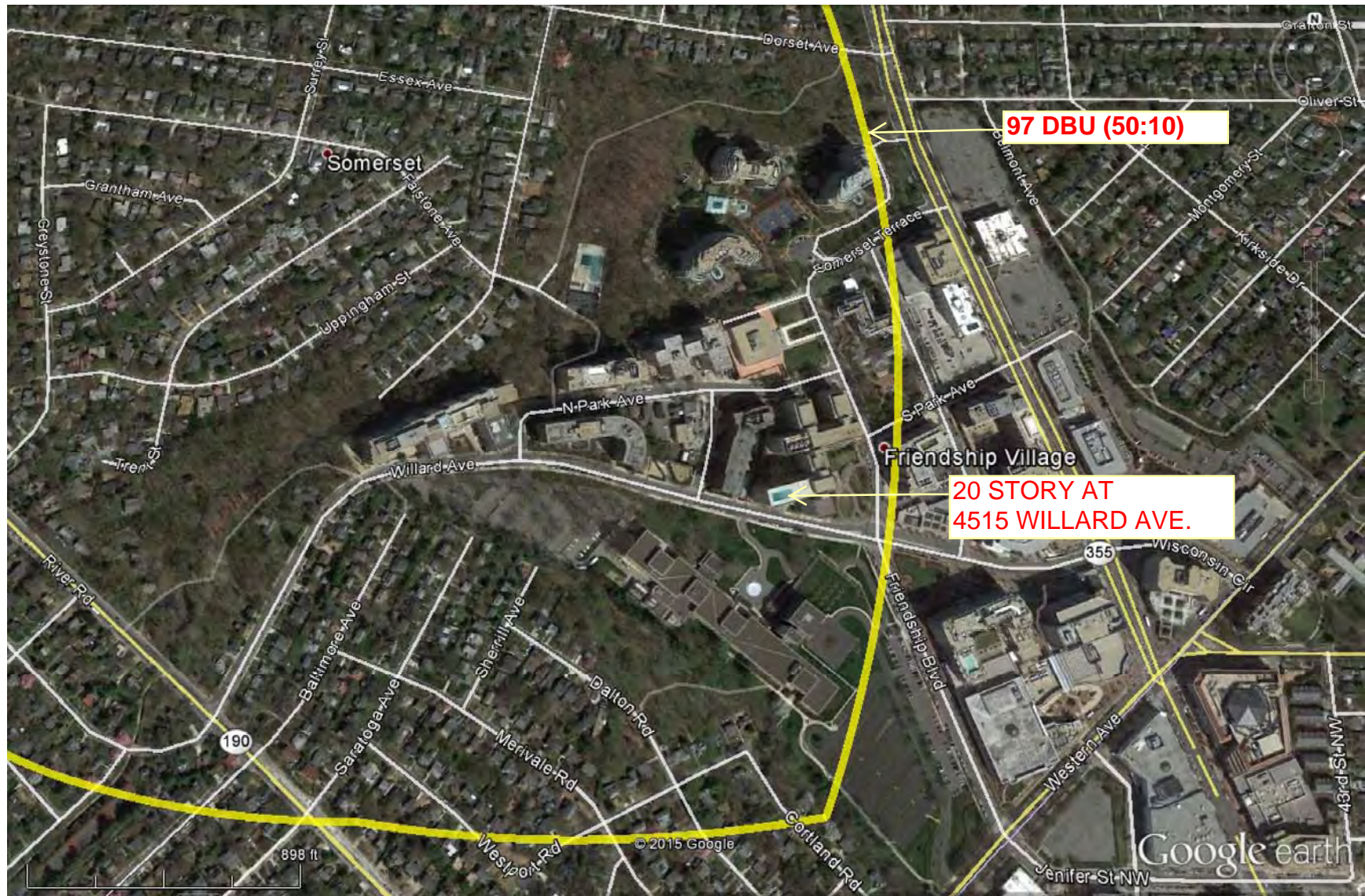
Taller buildings within interference contour superimposed on graph of the contour vs. height above ground demonstrating ample clearance to all occupied floors.

1. 15 story building closest to tower on Westbard (66-132 meters).
2. 17 story building at 4701 Willard. (793-950 meters)
3. 18 story building on Park Avenue (1146 meters)
4. 20 story building at 4515 Willard Avenue (1.27 km).

E1C AERIAL VIEW OF 97 DBU INTERFERENCE CONTOUR



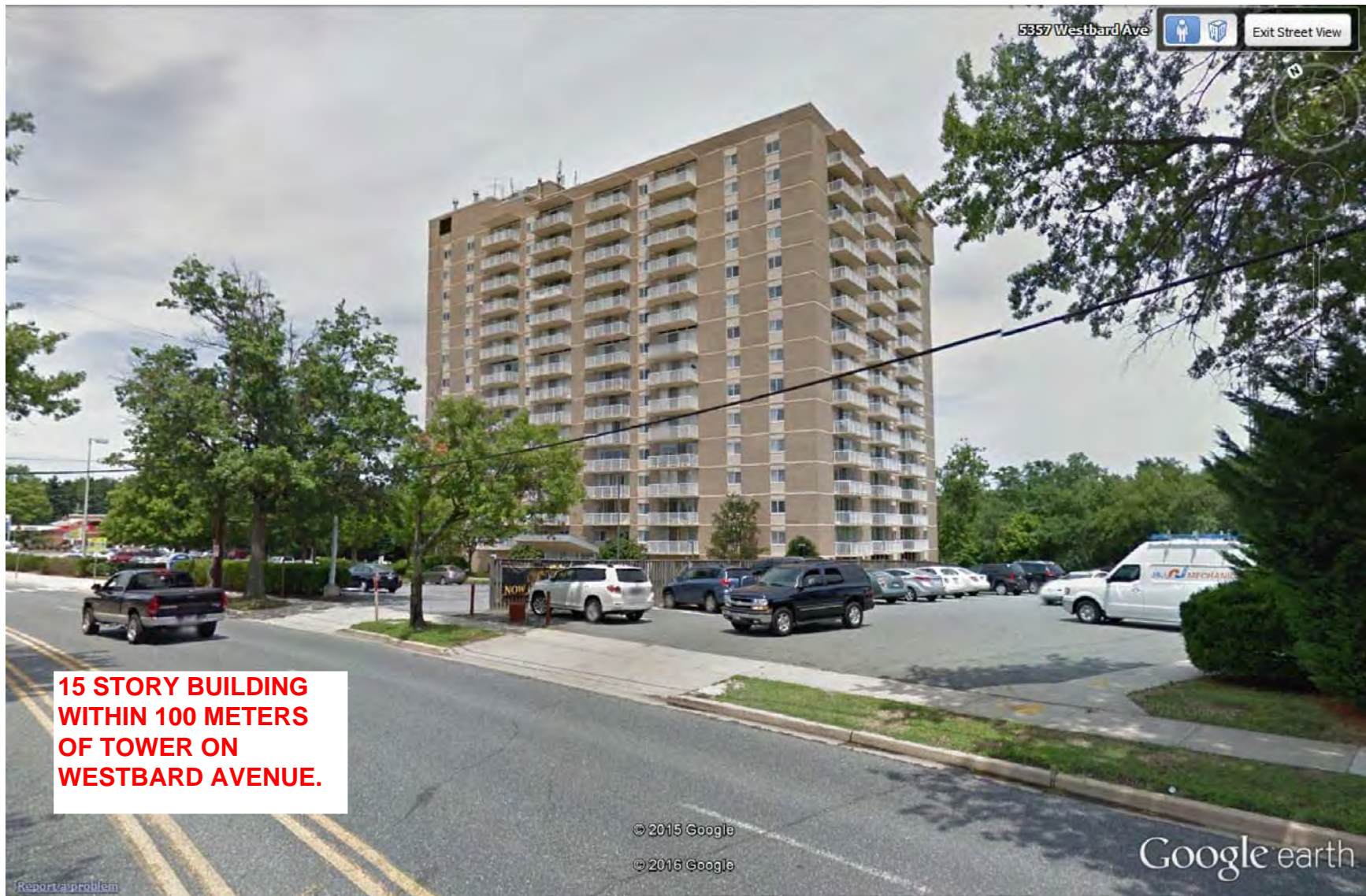
E1C AERIAL VIEW OF LOCATION OF TALLEST BUILDINGS WITHIN THE 97 DBU



E1C 100 METER RADIUS OF SITE SHOWING SINGLE TALL BUILDING AT 15 STORIES



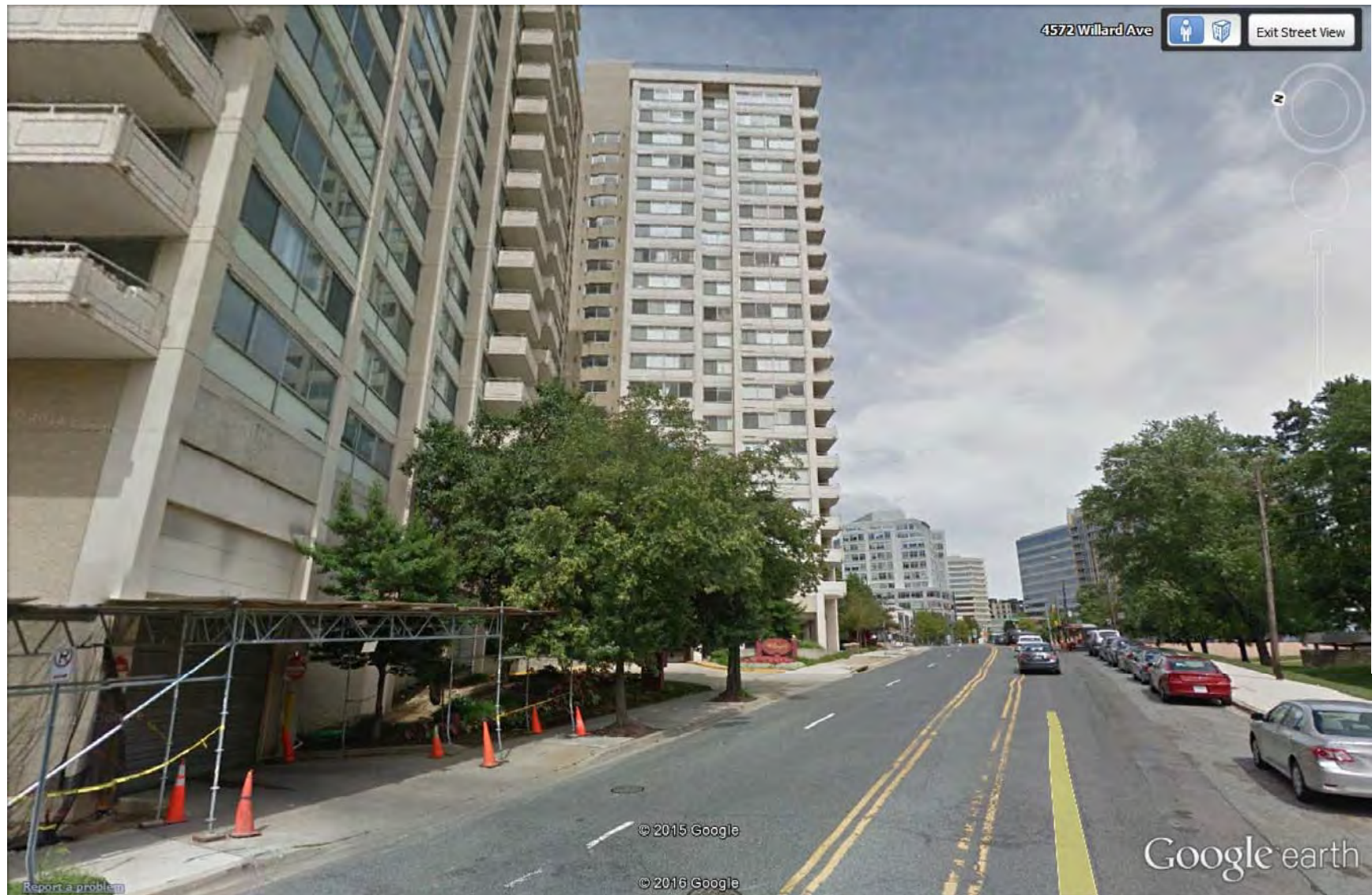
E1C STREET VIEW OF 15 STORY BUILDING WITHIN 100 METER RADIUS



E1C 18 STORY BUILDING ON PARK AVENUE AT 1.15 KM



E1C TALLEST BUILDING WITHIN 97 DBY AT 4515 WILLARD AVENUE AT 1.27 KM





E1D

W252DC.C

01-18-2016

RMS(V)= .908

Graph is Relative Field

Azi	Field	dBk	kw
000	1.000	-06.990	0.200
010	1.000	-06.990	0.200
020	1.000	-06.990	0.200
030	1.000	-06.990	0.200
040	1.000	-06.990	0.200
050	1.000	-06.990	0.200
060	1.000	-06.990	0.200
070	1.000	-06.990	0.200
080	1.000	-06.990	0.200
090	1.000	-06.990	0.200
100	1.000	-06.990	0.200
110	1.000	-06.990	0.200
120	0.700	-10.088	0.098
130	0.500	-13.010	0.050
140	0.270	-18.362	0.015
150	0.270	-18.362	0.015
160	0.270	-18.362	0.015
170	0.270	-18.362	0.015
180	0.500	-13.010	0.050
190	0.700	-10.088	0.098
200	1.000	-06.990	0.200
210	1.000	-06.990	0.200
220	1.000	-06.990	0.200
230	1.000	-06.990	0.200
240	1.000	-06.990	0.200
250	1.000	-06.990	0.200
260	1.000	-06.990	0.200
270	1.000	-06.990	0.200
280	1.000	-06.990	0.200
290	1.000	-06.990	0.200
300	1.000	-06.990	0.200
310	1.000	-06.990	0.200
320	1.000	-06.990	0.200
330	1.000	-06.990	0.200
340	1.000	-06.990	0.200
350	1.000	-06.990	0.200

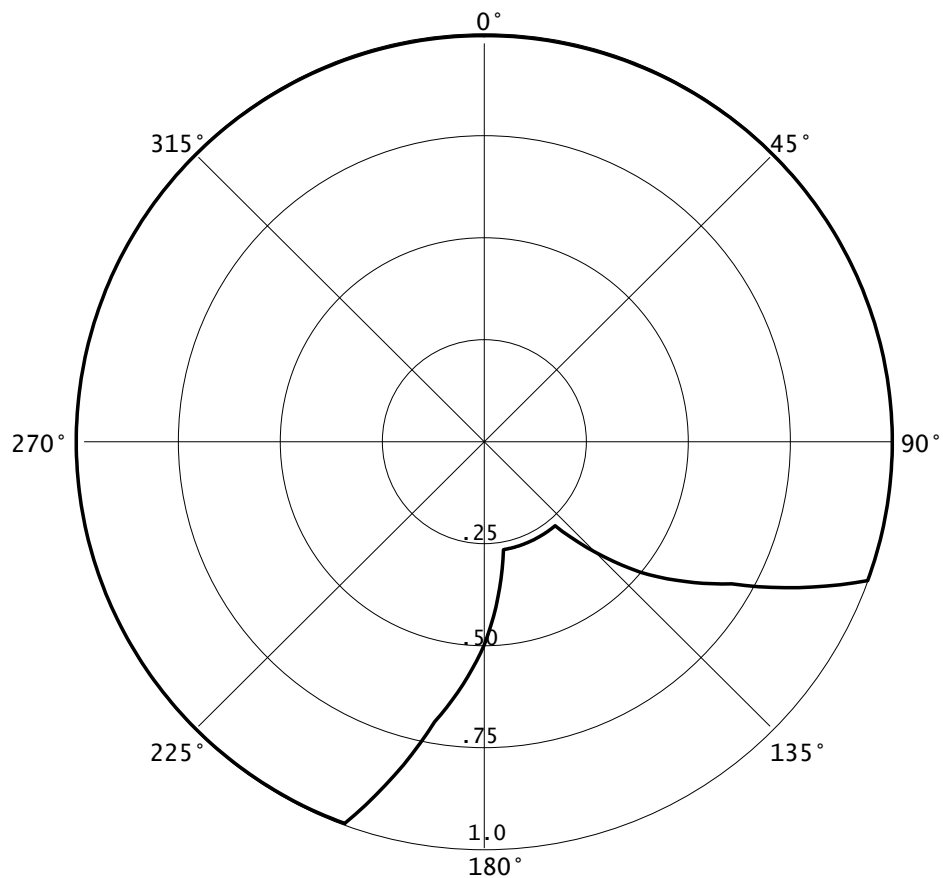
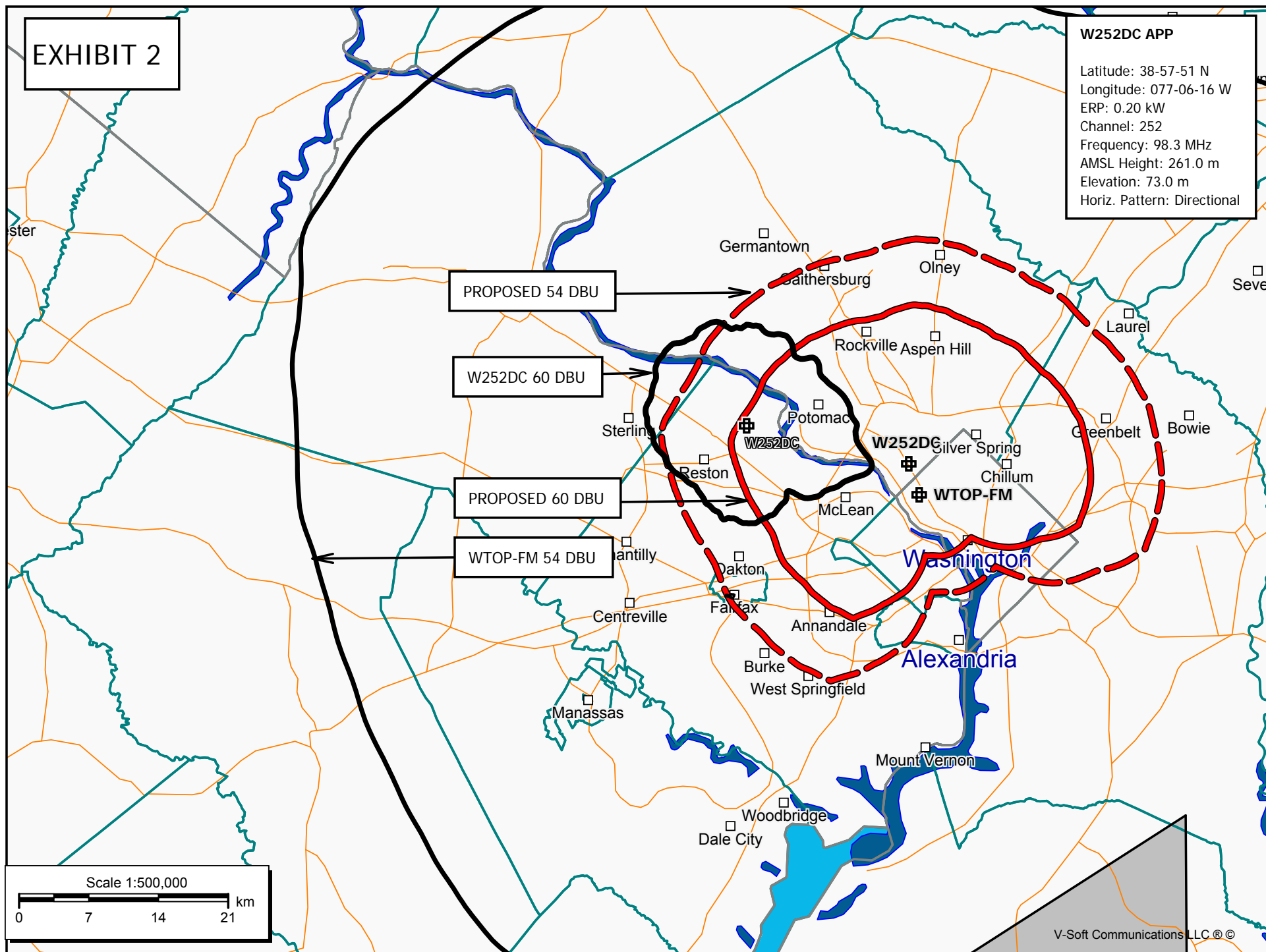


EXHIBIT 2

W252DC APP

Latitude: 38-57-51 N
Longitude: 077-06-16 W
ERP: 0.20 kW
Channel: 252
Frequency: 98.3 MHz
AMS L Height: 261.0 m
Elevation: 73.0 m
Horiz. Pattern: Directional



E3 Registration 1035708



Registration Detail

Reg Number	1035708	Status	Constructed
File Number	A0630109	Constructed	12/27/1965
FAA Study	2009-AEA-294-OE	EMI	No
FAA Issue Date	02/24/2009	NEPA	No

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Communications Purposes

Location (in NAD83 Coordinates)

Lat/Long 38-57-50.9 N 077-06-14.9 W 5202B RIVER RD
City, State BETHESDA , MD
Center of
AM Array

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
73.2	246.6
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
319.8	227.4

Painting and Lighting Specifications

FAA Chapters 4, 7, 13
Paint and Light in Accordance with FAA Circular Number 70/7460-1J

Owner & Contact Information

FRN	0006156111	Licensee ID	L00132131
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Owner

Pinnacle Towers LLC Attention To: Regulatory Department 2000 Corporate Drive Canonsburg , PA 15317	P: (724)416-2000 E: Regulatory.Department@CrownCastle.com
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Contact

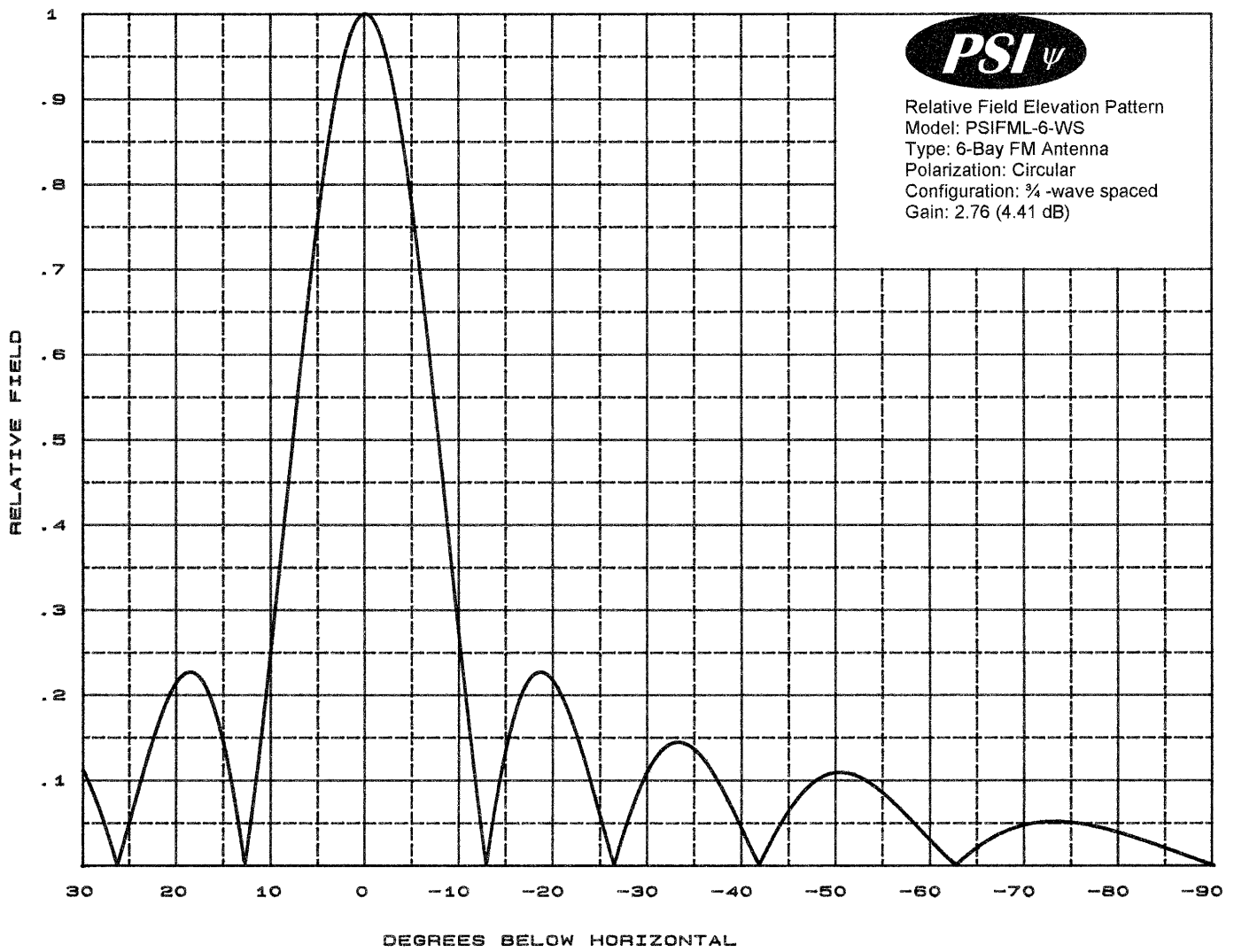
Verre , Christine A 2000 Corporate Drive Canonsburg , PA 15317	P: (336)643-2524 E: Christine.Verre@CrownCastle.com
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Last Action Status

Status	Constructed	Received	04/06/2009
Purpose	Notification	Entered	04/06/2009
Mode	Interactive		

Related Applications

04/06/2009	A0630107 - Modification (MD)
04/06/2009	A0630109 - Notification (NT)
05/14/2007	A0549278 - Modification (MD)
	Related applications (11)



PROPAGATION SYSTEMS INC.

Relative Field Tabulation

Elevation Pattern

Antenna: PSIFML-6-WS

3/4-Wave Bay Spacing

Angle	Relative Field	Angle	Relative Field	Angle	Relative Field
-90	0.001	-50	0.109	-10	0.261
-89	0.004	-49	0.106	-9	0.365
-88	0.008	-48	0.100	-8	0.472
-87	0.012	-47	0.092	-7	0.577
-86	0.016	-46	0.080	-6	0.676
-85	0.020	-45	0.065	-5	0.767
-84	0.024	-44	0.047	-4	0.847
-83	0.028	-43	0.027	-3	0.912
-82	0.032	-42	0.005	-2	0.960
-81	0.035	-41	0.018	-1	0.990
-80	0.039	-40	0.041	0	1.000
-79	0.042	-39	0.065	1	0.990
-78	0.045	-38	0.087	2	0.960
-77	0.047	-37	0.106	3	0.912
-76	0.049	-36	0.123	4	0.847
-75	0.050	-35	0.135	5	0.768
-74	0.051	-34	0.142	6	0.677
-73	0.052	-33	0.144	7	0.577
-72	0.051	-32	0.140	8	0.472
-71	0.050	-31	0.128	9	0.365
-70	0.047	-30	0.111	10	0.261
-69	0.044	-29	0.087	11	0.161
-68	0.040	-28	0.058	12	0.069
-67	0.035	-27	0.024	13	0.013
-66	0.028	-26	0.014	14	0.083
-65	0.021	-25	0.054	15	0.140
-64	0.013	-24	0.094	16	0.182
-63	0.003	-23	0.132	17	0.210
-62	0.007	-22	0.166	18	0.224
-61	0.017	-21	0.195	19	0.226
-60	0.029	-20	0.215	20	0.215
-59	0.040	-19	0.226	21	0.195
-58	0.052	-18	0.224	22	0.166
-57	0.064	-17	0.210	23	0.132
-56	0.075	-16	0.182	24	0.094
-55	0.085	-15	0.140	25	0.054
-54	0.093	-14	0.083	26	0.014
-53	0.100	-13	0.013	27	0.023
-52	0.106	-12	0.069	28	0.058
-51	0.108	-11	0.161	29	0.087