

W244EC Contour Protection Exhibit

W244EC proposes use of an existing Shively 6832-2 omnidirectional two-bay antenna mounted at 555 meters above mean sea level, 43 meters above ground level on the present tower, ASR number 1045276. At the proposed effective radiated power of 25 watts, W244EC will continue to protect the pertinent contours of all Co-channel and 1st-Adjacent facilities, as demonstrated in Figure 1.

This site is within the protected contours of 3rd-adjacent stations WCBF, Channel 241A, and WYXL, Channel 247B, as shown in Figure 2. The predicted F(50,50) field strength of WCBF at the site is 64.4 dBu, while WYXL has a lesser field strength of 56.7 dBu. Therefore, the W244EC interference contour (calculated on the assumption of free-space propagation and a U/D ratio of +40 dB) has a value of 96.7 dBu and a radius of 513 meters, as shown in Figures 3 and 4. Within this circle, the residence with the highest ground elevation is 335 meters northeast of the tower, as shown in Figure 5. The spot elevation at this residence is 392.45 meters, shown at "Point 1". It represents a "worst case" location, because the ground slopes downward from this spot across the inhabited area.

The following chart shows elevation pattern data for a Shively 6832-2 antenna as provided by the manufacturer, along with slant distance calculations to the proposed W244EC free space 96.7 dBu contour and corresponding intercepts on a horizontal plane. The antenna radiation center elevation of 555 meters AMSL exceeds ground elevation at Point 1 by 163 meters, rounded to the nearest integer. Clearance of the 96.7 dBu contour above an imaginary plane at the elevation of the closest residence exceeds 30 meters across the entire inhabited area. This proposal complies with §74.1204(d) since no actual third-adjacent interference is expected to occur within a populated area or along a major highway.

Depression Angle (Degrees)	Rel Field	ERP (kW)	ERP (dBk)	Slant Distance to Contour (Meters)	Clearance Above 392 Meter Plane (Meters)	Horizontal Distance From Tower (Meters)
0	1.000	0.025	-16.02	512.8	163.0	
1	0.999	0.025	-16.03	512.3	154.1	
2	0.997	0.025	-16.05	511.3	145.2	
3	0.993	0.025	-16.08	509.2	136.3	
4	0.988	0.024	-16.13	506.7	127.7	
5	0.981	0.024	-16.19	503.1	119.2	
6	0.973	0.024	-16.26	499.0	110.8	
7	0.963	0.023	-16.35	493.9	102.8	
8	0.952	0.023	-16.45	488.2	95.1	
9	0.940	0.022	-16.56	482.1	87.6	
10	0.926	0.021	-16.69	474.9	80.5	
11	0.911	0.021	-16.83	467.2	73.9	
12	0.895	0.020	-16.98	459.0	67.6	
13	0.877	0.019	-17.16	449.7	61.8	
14	0.859	0.018	-17.34	440.5	56.4	
15	0.839	0.018	-17.55	430.3	51.6	
16	0.819	0.017	-17.75	420.0	47.2	
17	0.797	0.016	-17.99	408.7	43.5	
18	0.775	0.015	-18.23	397.4	40.2	501.7
19	0.752	0.014	-18.50	385.6	37.4	473.4
20	0.728	0.013	-18.78	373.3	35.3	447.8
21	0.703	0.012	-19.08	360.5	33.8	424.6
22	0.678	0.011	-19.40	347.7	32.8	403.4
23	0.653	0.011	-19.72	334.9	32.2	384.0
24	0.627	0.010	-20.08	321.5	32.2	366.1
25	0.601	0.009	-20.44	308.2	32.7	349.6
26	0.574	0.008	-20.84	294.4	34.0	334.2
27	0.547	0.007	-21.26	280.5	35.6	319.9
28	0.521	0.007	-21.68	267.2	37.6	306.6
29	0.494	0.006	-22.15	253.3	40.2	294.1
30	0.467	0.005	-22.63	239.5	43.3	282.3

Figure 1
Co-Channel and 1st-Adjacent Contour Protection

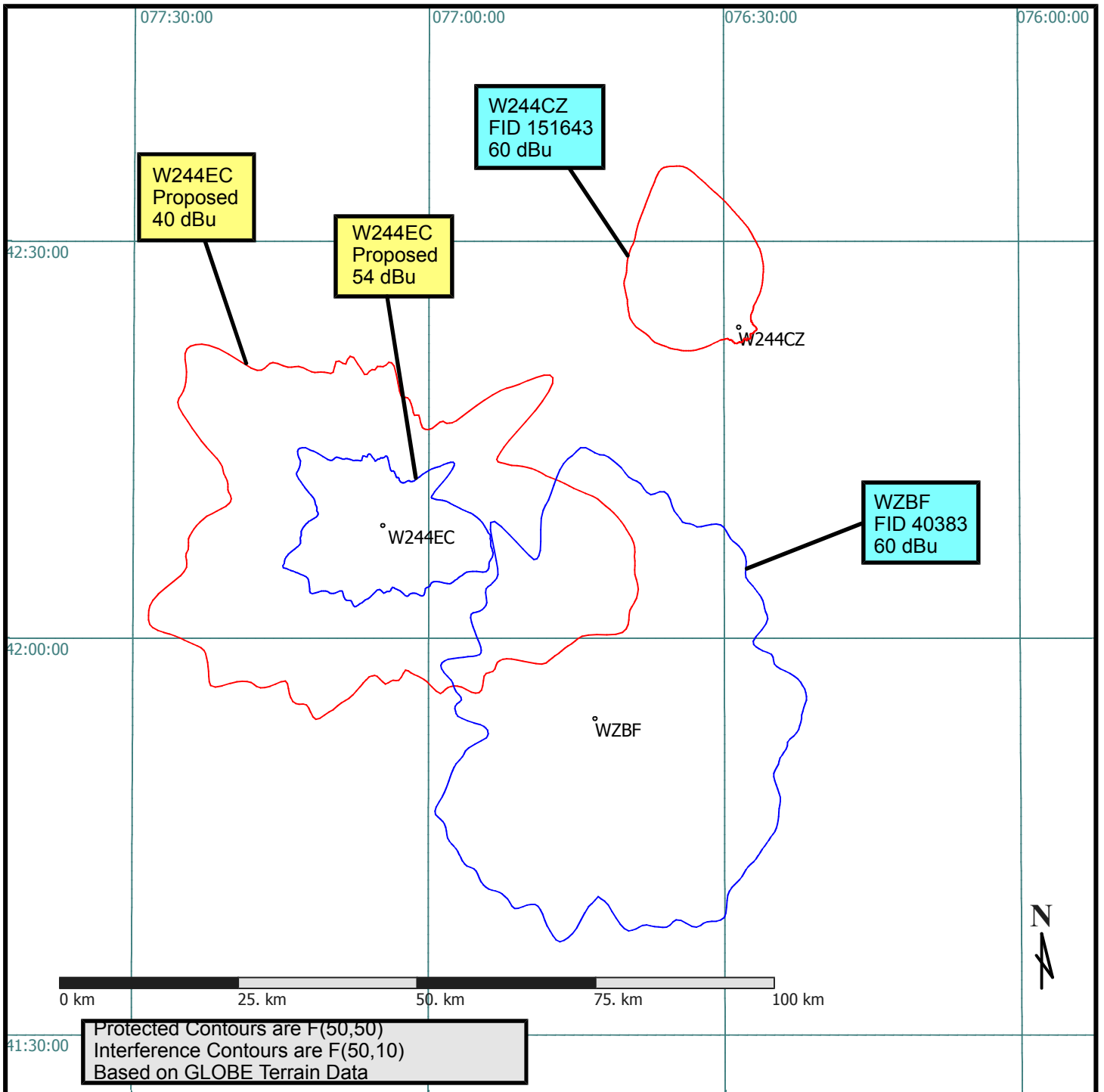


Figure 2
2nd- and 3rd-Adjacent Contour Protection

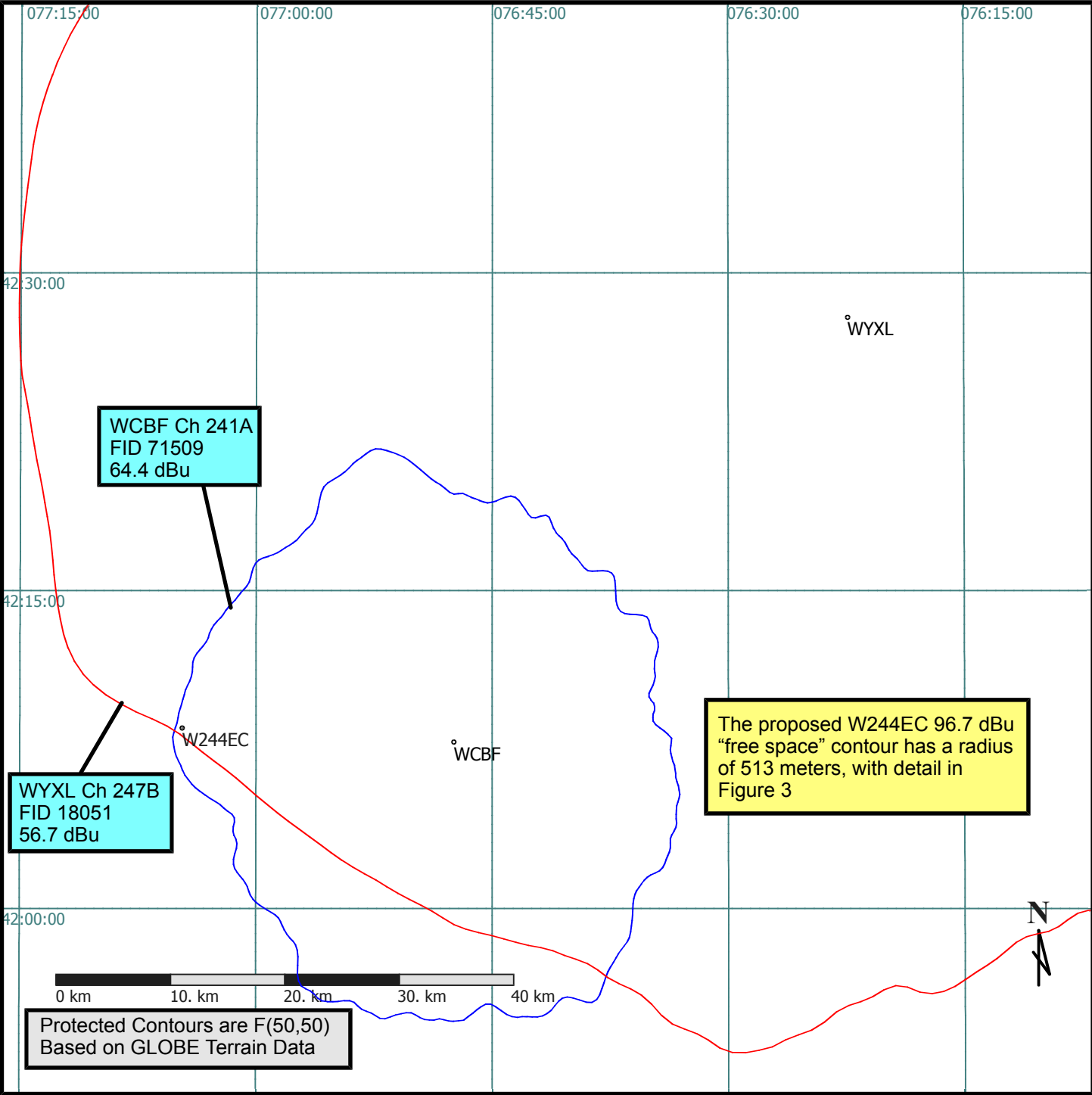


Figure 3
Proposed W244EC 96.7 dBu Contour

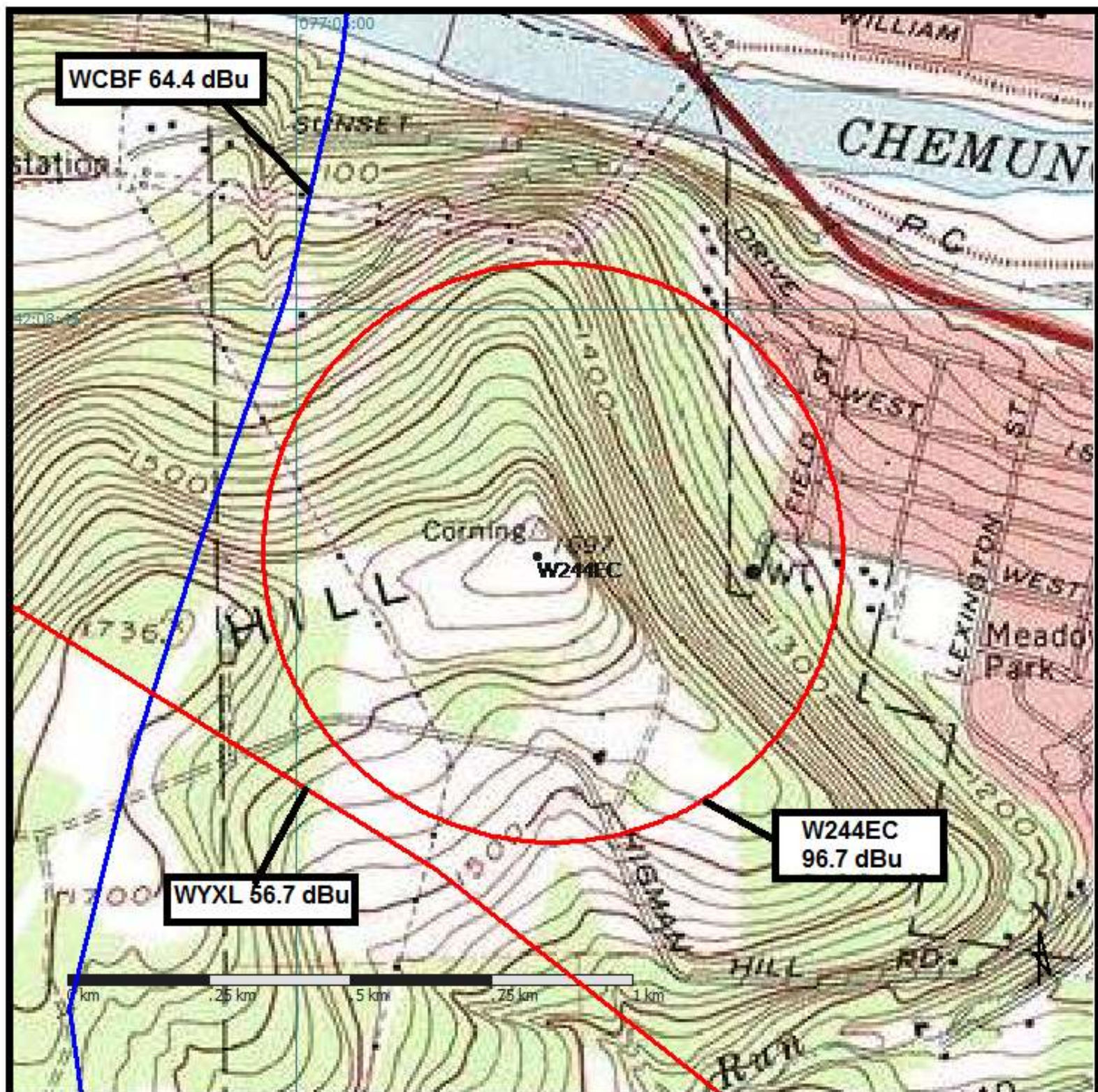


Figure 4 -- Satellite Imagery of 96.7 dBu Contour

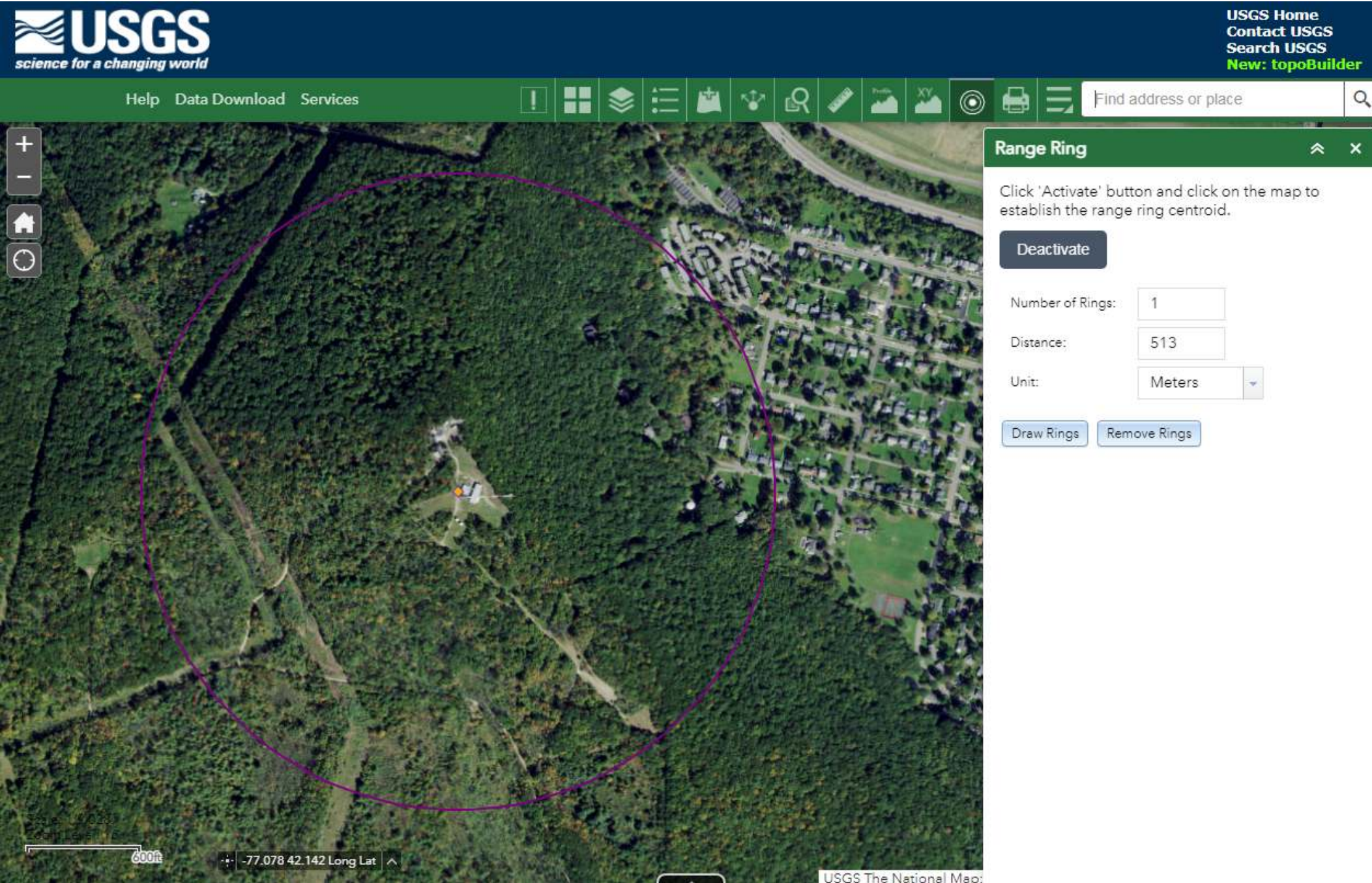


Figure 5 -- Ground Elevation at Closest Residence

