

### **U/D Considerations**

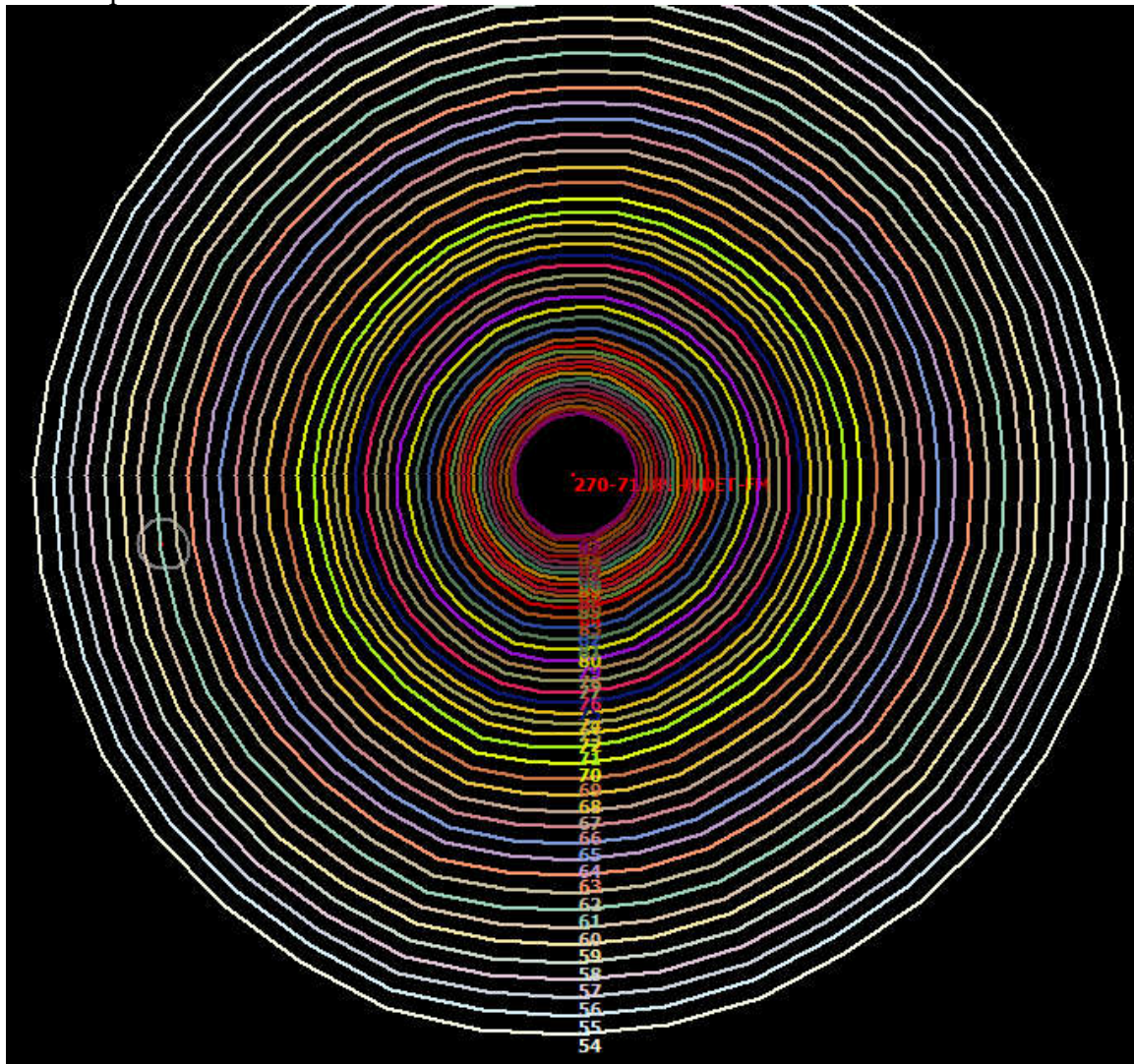
The proposed facility provides contour protection to all existing stations with the exception of facility ID 71189 (channel 270) and Facility ID 41080 (channel 275). These stations are second/third adjacent to the proposed translator. A U/D study will show that no interference will be caused to these stations.

The signal strength of facility ID 71189 at the proposed site is 61.2 dBu (see U/D Map exhibit below). Facility ID 41080 produces more than 61.2 therefore for simplicity, studying the 61.2 dBu covers both stations. Using a U/D ratio of 40 dB for second/third adjacent protection, the 101.2 dBu contour of the proposal was studied.

Attached below is vertical pattern study using the freespace formula for calculating distance to the contours. At 80 watts using the vertical pattern of the 6-bay antenna the 101.2 dBu contour goes out 111 meters from the unoccupied transmitter bldg. A red circle is drawn at 111 meters.

The nearest occupied structure is over 165 meters away. Due to the fact there are no occupied structures or four-lane roads within 111 meters of transmitter site this proposal fully protects both facility ID's 71189 and 41080. This application therefore fully meets the requirements of 47.1204(d) for a no-interference showing.

U/D Map - Small Red Dot on Left-Side Shows Transmitter Site at 61.2 dBu



## **Freespace Interference Study for a given antenna based on Vertical Radiation Pattern**

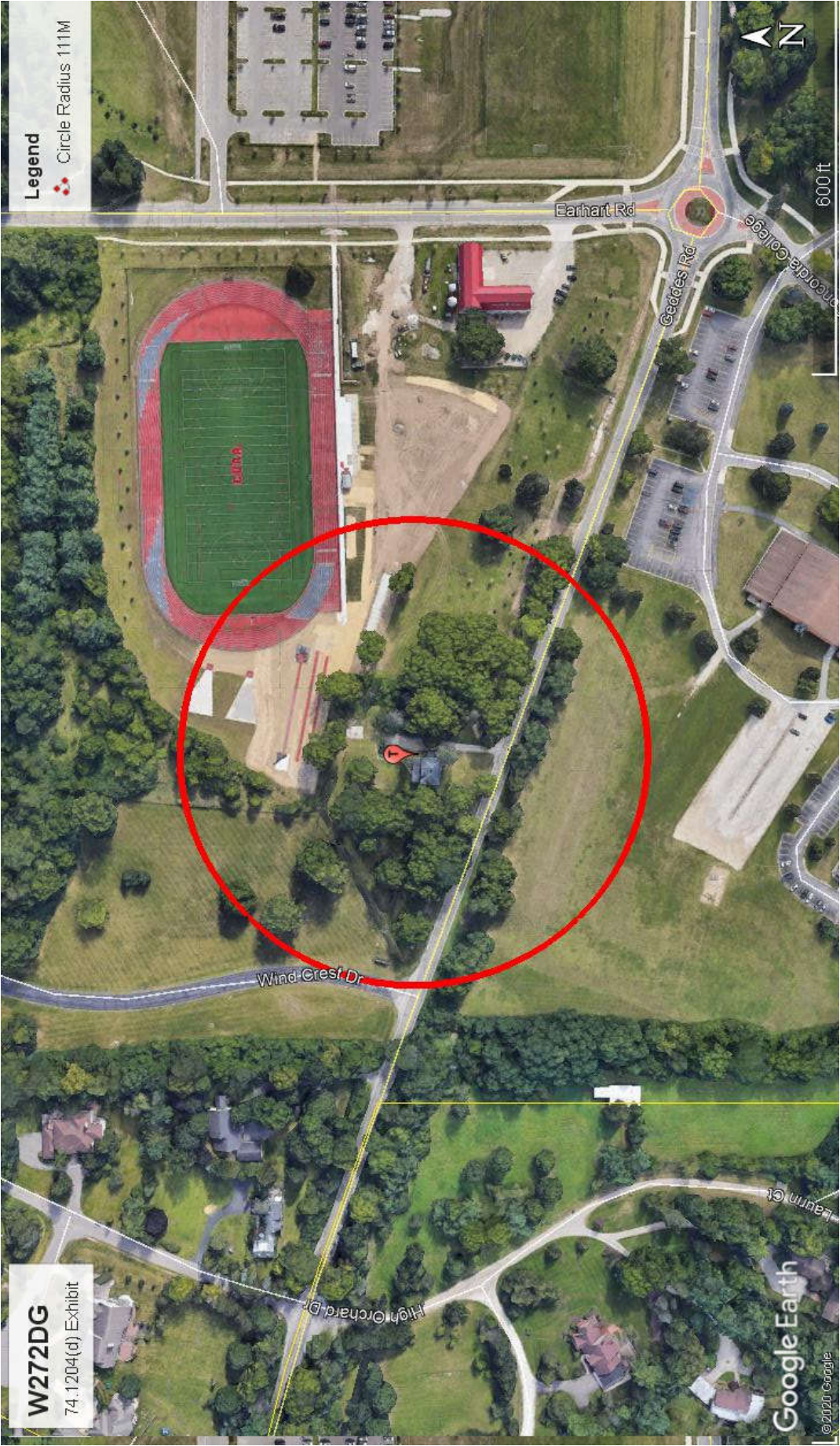
Antenna Make: ETC

Antenna Model: FM-6V Full-Wave Spaced

Depression Angle from Antenna	Antenna Relative Field	ERP Watts	ERP dBk	Distance to Ground from Antenna (km)	Free Space Signal (dBu)	2.5 dB Loss for Reflection	Signal Strength at Ground (dBu)	Circular Distance From Tower (m)
90	0.125	1.250	-29.03	0.0297	108.4	0	108.4	0.00
85	0.160	2.048	-26.89	0.0298	110.5	0	110.5	2.60
80	0.198	3.136	-25.04	0.0302	112.3	0	112.3	5.24
75	0.230	4.232	-23.73	0.0307	113.4	0	113.4	7.96
70	0.236	4.456	-23.51	0.0316	113.4	0	113.4	10.81
65	0.194	3.011	-25.21	0.0328	111.4	0	111.4	13.85
60	0.089	0.634	-31.98	0.0343	104.2	0	104.2	17.15
55	0.047	0.177	-37.53	0.0363	98.2	0	98.2	20.80
50	0.132	1.394	-28.56	0.0388	106.6	0	106.6	24.92
45	0.085	0.578	-32.38	0.0420	102.1	0	102.1	29.70
40	0.060	0.288	-35.41	0.0462	98.2	0	98.2	35.40
35	0.126	1.270	-28.96	0.0518	103.7	0	103.7	42.42
30	0.004	0.001	-58.93	0.0594	72.5	0	72.5	51.44
25	0.148	1.752	-27.56	0.0703	102.4	0	102.4	63.69
20	0.024	0.046	-43.36	0.0868	84.8	0	84.8	81.60
15	0.216	3.732	-24.28	0.1148	101.4	0	101.4	110.84
10	0.038	0.116	-39.37	0.1710	82.9	0	82.9	168.44
5	0.614	30.160	-15.21	0.3408	101.1	0	101.1	339.47

Distance to Ground Level assumes flat ground or a site where the ground level is above average terrain in all azimuth

Maximum ERP	80 watts	Max dBu to Ground Level (0-110M)	113.4
Radiation Center AG	0.0297 km		
Radiation Center AG	97.441 ft.	Max dBu to Ground Level (111M-338M)	101.1



W272DG

74.1204(d) Exhibit

Legend

Circle Radius 111M

Google Earth

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